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Daily

is like having
your own
radiopharmacist
and cyclotron.

Service

You should be able to get radiopharmaceuticals reliably, any time, and on short notice.

Medi+Physics has developed a network of service laboratories throughout the country. They can deliver the radiopharmaceuticals you need in a day or less.

Now you can order late today and receive shipment by tomorrow morning. And for most of the U.S., deliveries are made by dependable, surface transportation.

Result—better service than ever on your radiopharmaceutical requirements. Call the Medi+Physics laboratory nearest you.

medi+physics

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T3+T4 Test- kit

Radiodiagnostics
easy – safe – rapid

For the
determination
of thyroxin binding
capacity and
total thyroxin
in serum



**Two
time-saving tests
for your lab.:
pipette once,
incubate for one hour,
automatic
phase separation,
measure.**

Contents T 3 kit: 12 calibrating tubes with 3.4 ml thybon® (J-125)-solution each • total activity: 3 μ Ci J-125 • preservative: 0,02% sodium azide • 12 adsorption tubes • 1 ml standard serum of defined TBG capacity •

Storage: store protected from light in the refrigerator at +4° to +6° C
Stability: 8 weeks at proper storage. The expiry date is indicated on the package.

Order No.: J 5113
for T3 1 package 12 tests

Contents T 4 kit: 12 calibrating tubes with 3.3 ml TBG-T 4- (J-125)- solution each • total activity: 1 μ Ci J-125 • preservative: 0,02% sodium azide • 12 adsorption tubes • 1 standard serum of defined T 4-concentration •

Order No.: J 5114
for T4 1 package 12 tests



BEHRING INSTITUTE

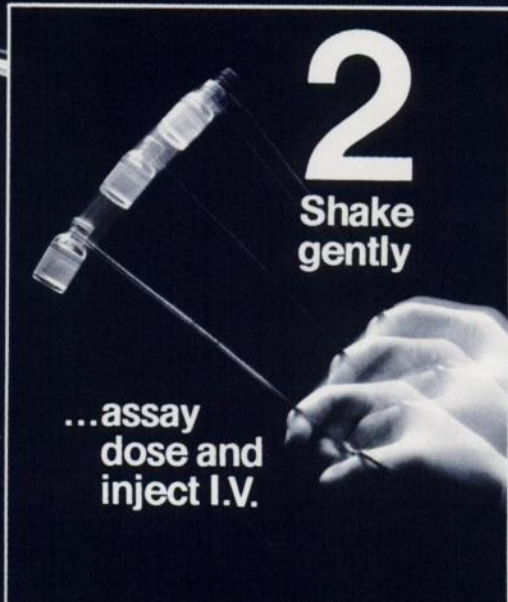
S. Behring

HOECHST AG · 6230 Frankfurt (Main) 80 · Behring Department

2 BASIC STEPS* TO PREPARE FOR LUNG IMAGING



1 Add
sterile sodium
pertechnetate
 ^{99m}Tc



2
Shake
gently

...assay
dose and
inject I.V.

*Appropriate shielding
should be maintained
at all times.

Introducing from Squibb

Macrotec®

Aggregated Albumin (Human)

for labeling with technetium-99m

Simplest and quickest to prepare of three technetium-labeled lung imaging agents. No waiting, heating or involved routines.

Stable for 8 hours after labeling if stored between 2° C. and 8° C. Won't agglomerate in the vial; loses virtually no labeling while standing. No need to resuspend or rewash after standing. Just shake gently again and inject the next patient.

Uniform particle size for good imaging. Over 90% of particles in the range of 10-100 microns. Lung clearance half time about four hours. High labeling efficiency, high lung/liver ratio.

COMPARISON OF BASIC STEPS IN PREPARATION OF THREE TECHNETIUM-LABELED LUNG IMAGING AGENTS*		
MACROTEC® Aggregated Albumin (Human)	Albumin Microspheres (human)	Other competing brand aggregated albumin (human)
1. Add ^{99m} TcO ₄ ⁻ to product vial	Add ^{99m} TcO ₄ ⁻ to product vial	Shake ampul, open and withdraw aggregate
2. Shake gently	Agitate in boiling water	Introduce product to reaction vial
3.	Withdraw supernatant and discard	Add ^{99m} TcO ₄ ⁻ to reaction vial
4.	Add rinsing/suspending solution to reaction vial	Shake thoroughly
5.	Agitate ultrasonically	

*Based on manufacturers' product information.

Macrotec® Aggregated Albumin (Human)

BRIEF SUMMARY

Macrotec (Aggregated Albumin [Human]) is a sterile, non-pyrogenic, lyophilized preparation of aggregated albumin. Each vial of the preparation contains 0.08 mg. tin as chloride, 1.5 mg. denatured human serum albumin, and 10 mg. Normal Serum Albumin (Human).

INDICATIONS: For use in perfusion lung imaging as an adjunct to other diagnostic procedures.

CONTRAINDICATIONS: At present there are no known contraindications to the use of this product.

WARNINGS: Radiopharmaceuticals should not be administered to patients who are pregnant, or during lactation, unless the benefits to be gained outweigh the potential hazards.

Ideally, examinations using radiopharmaceuti-

cals, especially those elective in nature, of a woman of childbearing capability, should be performed during the first few (approximately 10) days following the onset of menses.

Since ^{99m}Tc is excreted in milk during lactation, formula-feedings should be substituted for breast-feedings.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

Note: Macrotec (Aggregated Albumin [Human]) is not radioactive. However, after ^{99m}Tc is added adequate shielding of the resultant preparation should be maintained.

PRECAUTIONS: In the use of any radioactive material, care should be taken to insure minimum

radiation exposure to the patient consistent with proper patient management, and to insure minimum radiation exposure to occupational workers.

Aseptic technique is essential in the preparation of Technetated (Tc-99m) Aggregated Albumin (Human).

ADVERSE REACTIONS: At present, adverse reactions have not been reported following the administration of this product.

For full prescribing information, consult package insert.

HOW SUPPLIED: In boxes of 5 vials



SQUIBB HOSPITAL DIVISION

E. R. Squibb & Sons, Inc.
Princeton, N. J. 08540

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A T4 says she's
hyperthyroid.

A T3 Uptake says she's
hypothyroid.

Now, using a single test,
you have the answer on
thyroid function
...not more questions.



It obviates many of the
factors which previously
have caused diagnostic
uncertainty in thyroid
testing.

The Res-O-Mat[®] ETR[®] Test.

Run a T3 on a pregnant euthyroid patient. It probably will report hypothyroidism.

Run a T4 on that same patient. It probably will report hyperthyroidism.

Now, run an *ETR* test on the same woman. Since the *ETR* test cuts through many of the knowns and unknowns that can distort other tests, it will ignore the effects of pregnancy and report the true thyroid status.

As you know, biological or technical variants



—such as pregnancy, the pill or interfering drugs—affect T3 and T4 in opposite or compensating directions. It's only when the two tests are related mathematically, to indicate effective or free thyroxine, that a reliable answer on thyroid status is reached.

Even though the *ETR* is a single in vitro test, it combines the concepts of T3 and T4. It arrives at a direct indication of the free or metabolically effective thyroxine. And it does it rapidly and accurately. It has this ability because it simultaneously considers total T4 concentration and hormone saturation of protein binding sites.¹

Besides pregnancy, the pill, iodides and other

drugs (which interfere with T3 and T4 determinations), *ETR* also obviates the effects of TBG deficiency, liver disorder and nephrosis*.

That's why it leads to answers on basic thyroid function—not more questions.

*Patients receiving d-thyroxine or replacement therapy with liothyronine (T3) will give erroneous results as with other thyroid function tests.

¹Mincey, E.K., Thorson, S.C., and Brown, J.L., et al.: A new parameter of thyroid function—The effective thyroxine ratio. *J. Nucl. Med.* 13:165-168, February, 1972.

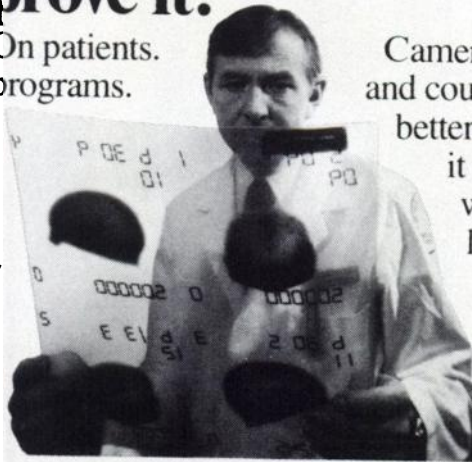
Mallinckrodt, Inc.
675 Brown Road
Hazelwood, Missouri 63042



You can increase patient scan capacity 25% or more with a Cameray[®] gamma camera. We can prove it.

We have proven it. On patients. In major clinical evaluation programs. It's not surprising. Cameray was designed specifically to simplify scanning procedure as well as to improve scan quality. As a result, Cameray will cut the technician's time and increase the productivity of any nuclear medicine facility. Here's why:

- All controls more accessible — because they are all on the console control panel.
- Patient numerics right on film for improved efficiency and confidence in accuracy.
- Collimators designed for quick changes.
- Repeatability assured from scan to scan without recalibration.
- Optional x-ray matrix feature built in — not an add-on.



Cameray's uniformity, resolution and count rate are equal to or better than competitors'. And it can be easily updated for whole body scanning in less space than competitive equipment.

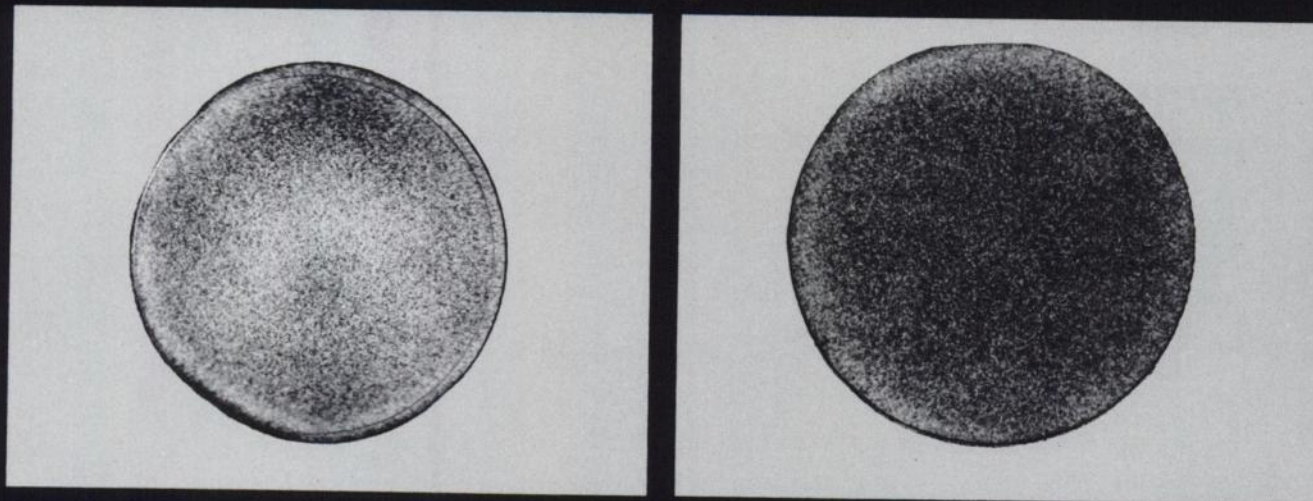
There are a lot more facts to know about the competitively-priced Cameray and what it can do to improve

gamma scan efficiency for you.

To get full details, contact Raytheon Company, Medical Electronics, Fourth Avenue, Burlington, Mass. 01803. 617 272-7270.



How about a physical checkup for your camera?



It's a simple matter with our flood source, and you'll know immediately if unbalanced photo-multipliers are interfering with diagnoses.

The flood source (1mCi, ^{57}Co) is a solid, light, flat disk 13.5" in diameter, precision made to provide uniform radiation over the entire surface ($\pm 5\%$ or better). No liquids to mix, spill, or dispose of, and the camera collimator can remain in place. The checkup is so simple it can (and should) be performed daily.

New England Nuclear has years of experience and numerous products in the field of nuclear instrumentation calibration. Let us send you further information.



New England Nuclear Radiopharmaceutical Division

Atomlight Place, North Billerica, Mass. 01862
Telephone (617) 667-9531

Canada: NEN Canada Ltd., Dorval, Quebec, H9P-1B3.
Tel: (514) 636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D6072 Dreieichenhain,
Siemensstrasse 1, W. Germany. Tel: Langen (06103) 85035



COLLIMATOR PROTECTORS
Model CP-224

These disposable plastic sheets are designed to keep the face of scintillation camera collimators from becoming contaminated.

The sheets come in rolls of 300 with perforations for easy separation. Simply unroll the sheet, tear at the perforation and apply to the collimator face. The adhesive backing makes application quick and easy. When the sheet becomes contaminated, peel it off, discard and apply a new one. Protectors are so inexpensive that a new one can be used for each patient. Each sheet is 12" x 12".

Model CP-224 (Roll of 300 Protectors) \$50.00



SYRINGE HOLDER
Model SH-277

This holder is for temporary storage or for transport of single syringes containing radiopharmaceuticals. Syringes from 2 cc. to 20 cc. capacity fit in the 7/8" i.d. holder. The lead wall is 3/8" thick, and the inside depth is 5 3/4".

Model SH-277
\$14.00



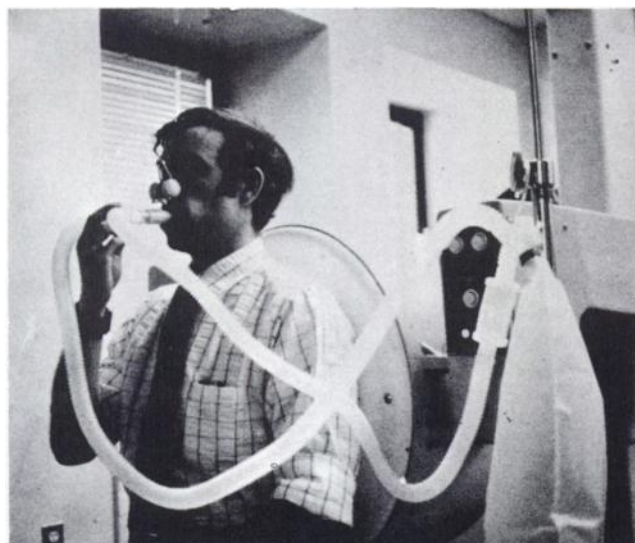
SYRINGE CARRIER
Model SC-722

Syringes containing radiopharmaceuticals can be safely stored and transported in the **Model SC-722** lead lined steel Syringe Carrier. Several syringes can be held at one time, depending upon syringe size.

Specifications

Dimensions: Inside—7 1/2" long x 2 1/2" high x 2 1/4" deep. Wall Thickness: 1/8" lead all over. Finish: Gold invertex. Weight: 7 pounds.

Model SC-722 **\$37.50**



DISPOSABLE XENON-133
REBREATHING SYSTEM
Model Xe-103

- Disposable combination inhalation and trap system.
- Inexpensive, easy to use.
- No sterilization of mouthpiece required.

Model DX-133 **\$11.95**



XENON-133
GAS TRAP
Model Xe-102

- Eight charcoal chambers provide efficient xenon removal from expired air.
- Ideal Alternate to expensive exhaust systems
- Totally shielded
- Fifteen minute washout capacity per study
- Removes 98+% of all xenon exhaled

SPECIFICATIONS: 20" wide by 18" deep by 45" high. **Weight** — 150 pounds. **Number of chambers** — 8. **Power requirements** — 115V, 60 Hz, AC.

Model XE-102 complete with water trap/adaptor plexiglass storage cover and hose — **PRICE: \$895.00.**

• All prices F.O.B. Plainview, N.Y.



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Nobody can
give you a perfect
posterior whole body scan...
but we're close.

Two centimeters, to be exact.

The Searle Whole Body Scintiscan™ is an accessory which adds whole body bone-imaging capability to the widely used and accepted Pho/Gamma Scintillation Camera. Designed for operational simplicity and clinical safety, it can perform whole body and single organ studies with ease and accuracy. The patient-to-detector distance is less than 2 cm for posterior, "under the table" scans, allowing you to perform high resolution studies without re-positioning of seriously ill patients. A wide range of scan speeds and detector apertures lets you optimize total body information, assuring rapid data acquisition and high patient throughput.

For more information — including complete specifications — on the Scintiscan, just write or phone your Searle Representative. He'll be glad to show you how it can add whole body imaging capability to your facility with ease and economy never before possible.

SEARLE

Searle Radiographics, Inc.

Subsidiary of G. D. Searle & Co.
2000 Nuclear Drive
Des Plaines, Illinois 60018
Phone (312) 298-6600



¹²⁵I Folate Radioassay Kit

⁵⁷Co Vitamin B₁₂ Radioassay Kit



Introducing another first — Clinical Assays GAMMA LABELED FOLATE and VITAMIN B₁₂ radioassay kits for the determination of the etiologic diagnosis of megaloblastic anemia and nutritional deficiencies.

Fast — Accurate — Reproducible —

Maximum sensitivity in the diagnostic range below 6ng/ml for Folate and 400 pg/ml for Vitamin B₁₂.

Denaturation of the buffered samples at 100°C prior to assay eliminates the need for running individual patient "blanks"(1). Pipettings, counting time and calculations are cut in half.

A new, improved ³H Folate radioassay kit which utilizes the buffered sample denaturation step is also available. Once again, pipettings, counting time and calculations are halved.

Other kits available:

GammaCoat Digoxin (¹²⁵ I)	Digoxin (³ H)
GammaCoat Digitoxin (¹²⁵ I)	Digitoxin (³ H)
GammaCoat Cortisol (¹²⁵ I)	Cortisol (³ H)
GammaCoat Renin Activity (¹²⁵ I)	Prostaglandins (³ H)



For Full Details Contact:

Clinical Assays, Inc.

237 Binney Street • Cambridge, Mass. 02142
(617) 492-2526

References: 1) Dunn, R. T.; Foster, L. B.;
Clin. Chem. 19, No. 10, 1101, 1973.

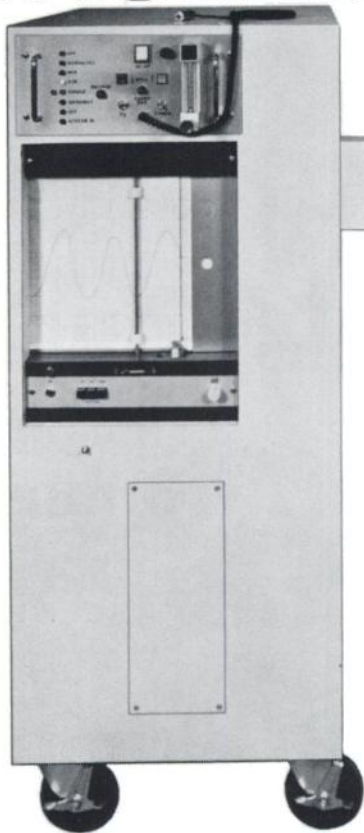
WE'VE

PACKED

**MORE SYSTEM
INTO OUR**

XENON-133

**LUNG
FUNCTION
UNIT**



to build you a completely self-contained, mobile instrument that will perform ALL VENTILATION AND PERFUSION STUDIES QUICKLY, EFFICIENTLY, ECONOMICALLY

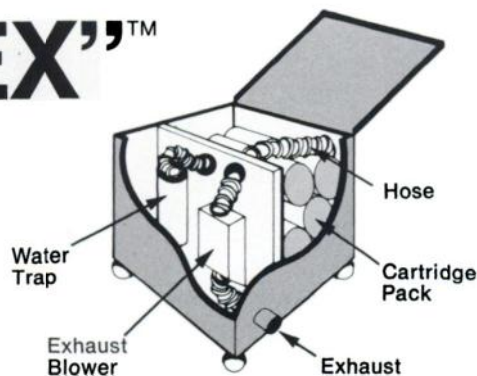
Before you invest in expensive Xenon-133 lung function equipment, check out ours.

Write for Bulletin NA-125DB

The ideal alternative to costly external vent systems

"NONEX"TM

Self-contained,
mobile, long-life
Xenon Gas Trap



Removes
radioactive Xenon
from exhaled air.

Write for Bulletin NA-156B



NUCLEAR ASSOCIATES, INC.

Subsidiary of

RADIATION-MEDICAL PRODUCTS CORP.

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Two new kits

From Cambridge Nuclear

1. Technetium (Tin) Pyrophosphate

Bone uptake > 40%
Labeling efficiency > 90%
Low soft tissue uptake

2. Technetium (Tin) Calcium D.T.P.A.

Renal clearance within 30 min. > 80%
Labeling efficiency > 90%
A true Technetium Chelate

Useful for renal imaging and glomerular filtration studies
as well as brain imaging and renal perfusion studies.

Xenon-133 gas is also available in cylinders
containing from 100 to 1000 mCi.

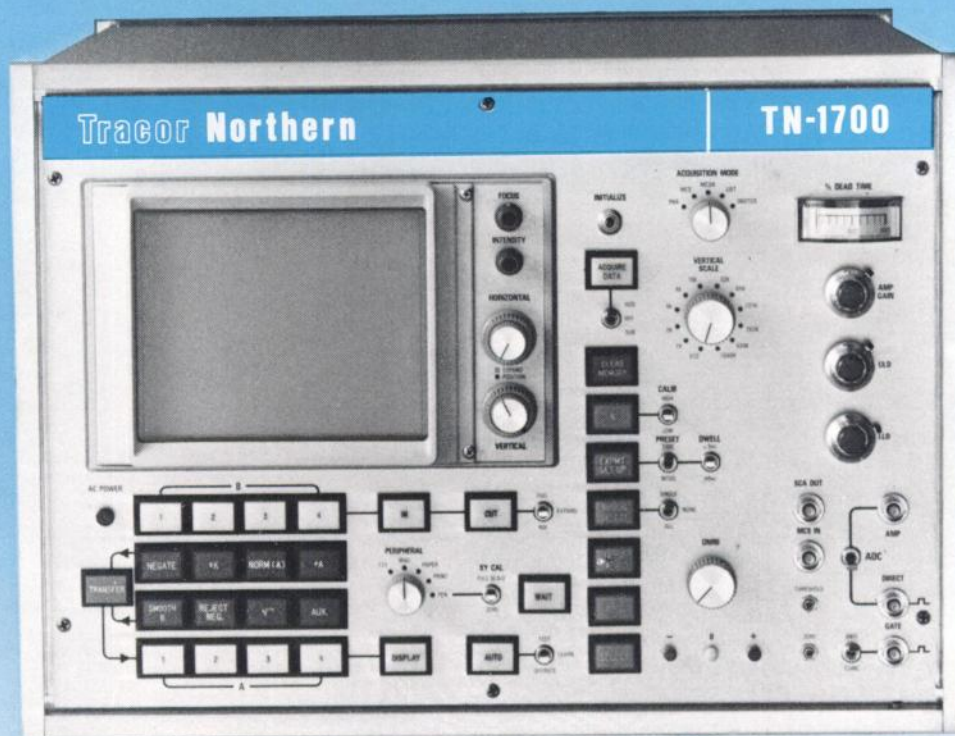
For further information regarding the availability of these products,
contact Cambridge Nuclear Radiopharmaceutical Corporation -
575 Middlesex Turnpike, Billerica, Massachusetts 01865.
(617) 935-4050.

Cambridge Nuclear
Radiopharmaceutical Corporation



THE NEW TN-1700.

The pacesetter for the next generation of pulse height analyzers from Tracor Northern



The **UNEXCELLED TN-1700** includes these standard features:

Acquisition Features

- New 200 MHz ADC
- Digital Conversion Gain Control
- "Zero-deadtime" MCS

Display

- Large 6.5" CRT
- Live, flicker-free display
- Full alphanumeric for results and labels

Region of Interest Versatility

- Unrestricted Setup (including overlapping limits)
- Dynamic Integration
- Selected-region I/O

Set-Up Convenience

- Automatic Sequence or Learn Mode
- Arbitrary Energy-Scale Calibration
- Interactive Controls

Dynamic Data Processing

- Smoothing
- Stripping/Summing
- Normalization

I/O Functions

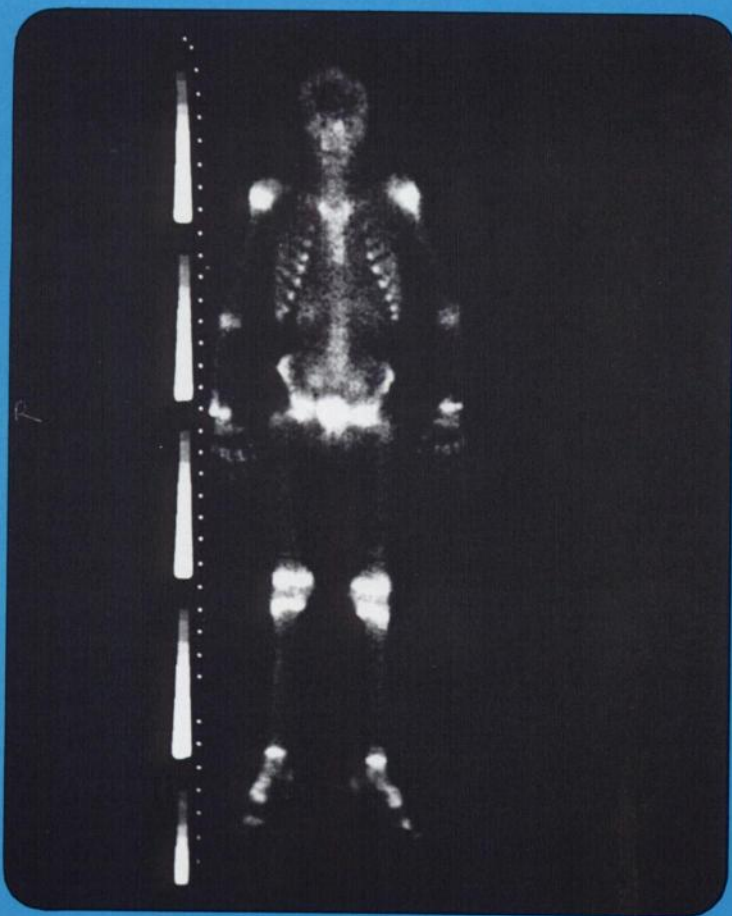
- Plotter (with alphanumeric labels)
- Teletype
- Parallel or Line Printer

Tracor Northern

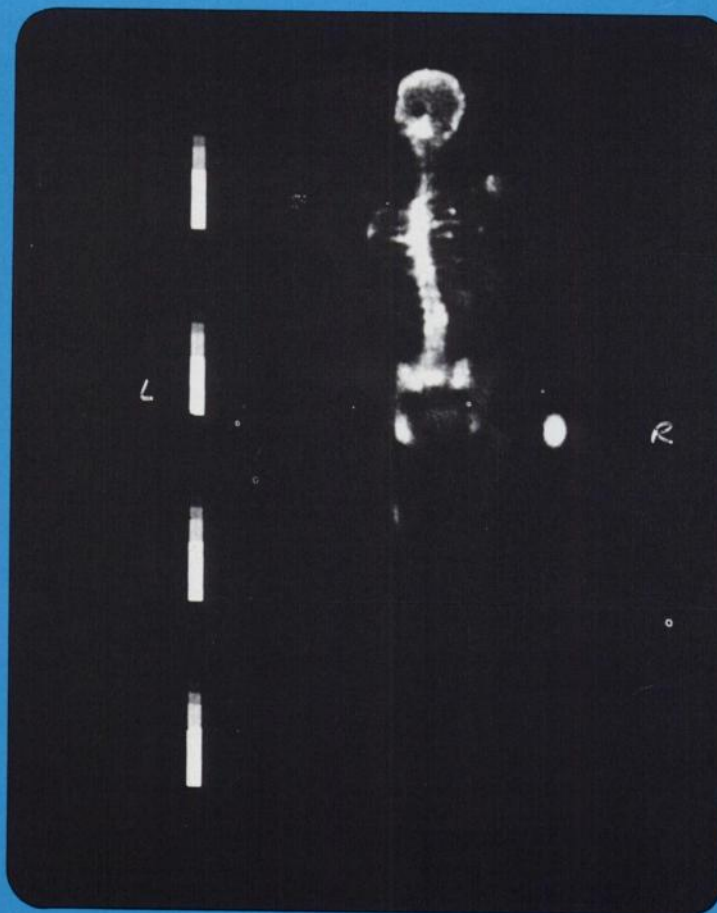
Tracor Europa B.V.
Schiphol Airport Amsterdam
Building 112a
The Netherlands
Telephone 020/15 16 02

NORTHERN SCIENTIFIC INC.
2551 West Beltline Highway
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Cleon Whole-Body Imager produces patient studies like these... IN 16 MINUTES OR LESS

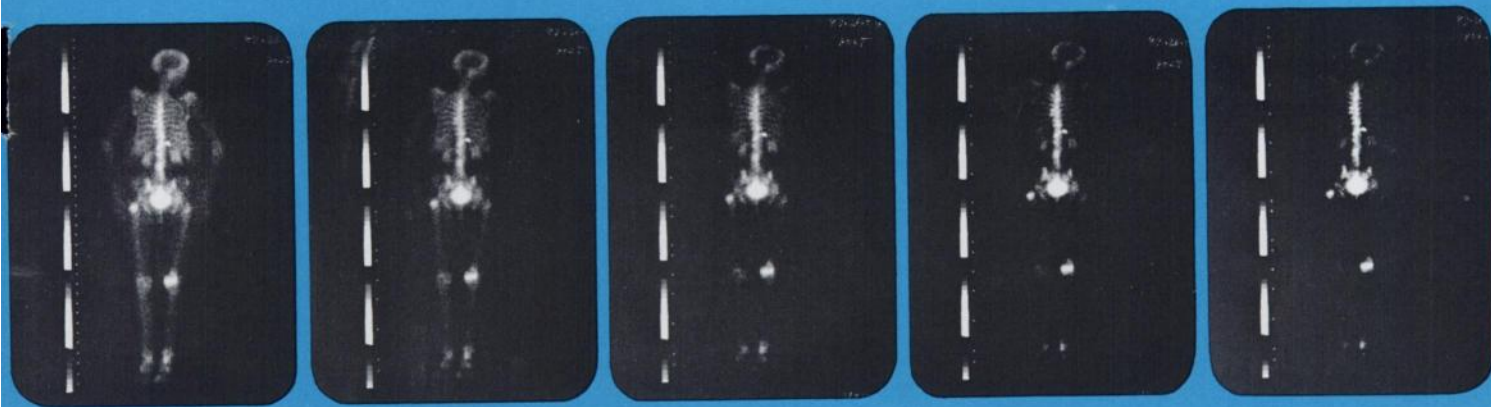


BONE IMAGE OF 13-YEAR-OLD BOY, ANTERIOR.
SCANNING AGENT = ^{99m}Tc -POLYPHOSPHATE.
LENGTH OF SCAN = 160 CENTIMETERS.
TIME OF SCAN = 16 MINUTES.
ID AT STERNUM = 416 CTS/CM².

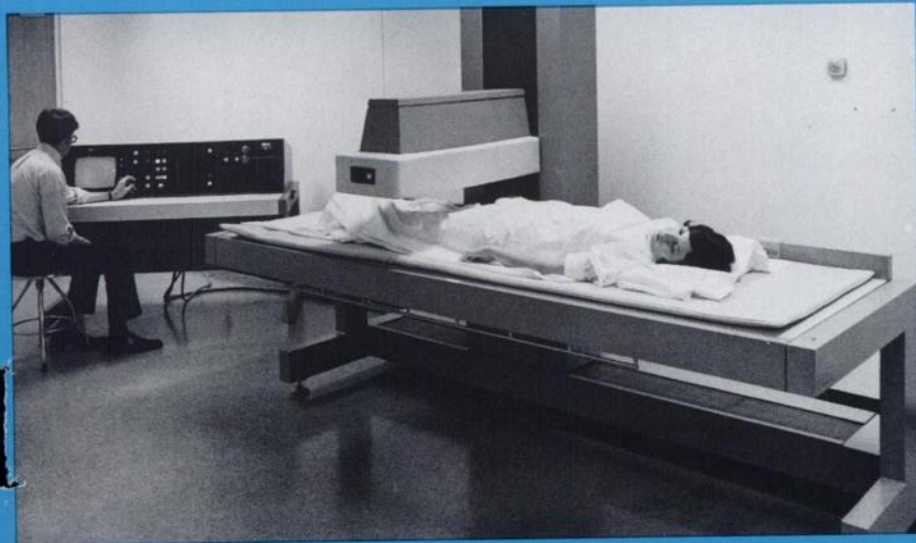


BONE IMAGE OF 56-YEAR-OLD WOMAN, POSTERIOR.
SCANNING AGENT = ^{99m}Tc -PYROPHOSPHATE.
LENGTH OF SCAN = 160 CENTIMETERS.
TIME OF SCAN = 16 MINUTES.
ID AT CERVICAL SPINE = 552 CTS/CM².

...AGAIN, AND AGAIN, AND AGAIN



BONE IMAGE OF 52-YEAR-OLD WOMAN, POSTERIOR. •
SCANNING AGENT = ^{99m}Tc -POLYPHOSPHATE.
LENGTH OF SCAN = 160 CENTIMETERS.
TIME OF SCAN = 16 MINUTES.
ID AT CERVICAL SPINE = 296 CTS/CM².
(IMAGES PHOTOGRAPHED FROM MAGNETIC DISC STORAGE SHOWING EFFECT OF INCREASING BACKGROUND SUPPRESSION.)



CLEON WHOLE-BODY IMAGER INSTALLED AT THE NUCLEAR MEDICINE DEPARTMENT,
NEW ENGLAND MEDICAL CENTER HOSPITAL, BOSTON, MASSACHUSETTS, U.S.A.

With Cleon, high-speed whole-body imaging becomes a clinical reality.

Reduced time-to-scan and increased information content are made possible by a single, silent sweep of the 24-inch wide crystal array from head to foot of the patient. Information once recorded can be played back repeatedly for study or for re-photographing with different values of exposure and background.

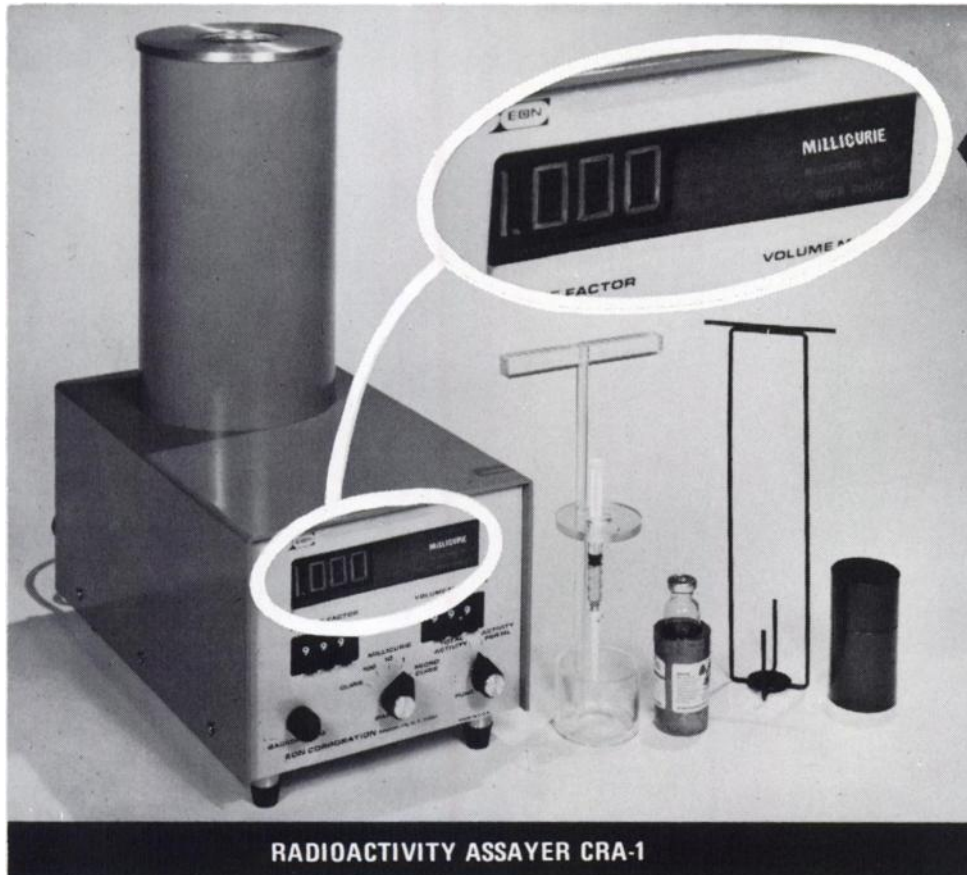
Clinicians and technologists are discovering advantages that make the Cleon instrument a "whole new ball game" in whole-body and organ imaging: dual detector heads . . . rapid diagnoses . . . high patient turnover . . . easy operation . . . less patient discomfort. To receive a brochure and other information, call or write to Paul Theriault, Sales Manager.

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CORPORATION

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FIGHT INFLATION with EON'S RADIOACTIVITY ASSAYER

- MORE FEATURES PER DOLLAR
- NO EXTRA CHARGES
- NO HIDDEN FUTURE COSTS



- AVOIDS HUMAN ERROR -

TYPICAL READOUT

ALSO INDICATES PER-
ML OR OVER-RANGE
IF APPLICABLE

Features

1. Measures down to one milliliter
2. Simple error-proof, push-button operation
3. Built-in background shield
4. Unsurpassed in sensitivity and accuracy
5. Completely manufactured in the U.S.A. by EON
6. Calibrations traceable to the U.S. Bureau of Standards
7. Measures dosages, concentrations and large volume activity for more than 40 isotopes
8. TWO Year Warranty

Never a charge for a new isotope calibration factor.



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MORE QUALITY INSTRUMENTS FROM



PSM-760



- LOW COST
- TRANSISTORIZED
- PORTABLE, BATTERY OPERATED
- RUGGED CONSTRUCTION
- INTERCHANGEABLE PROBES
- RANGES: 0-0.5mR/hr, 0-5mR/hr, 0-50mR/hr, 0-300, 0-3000, 0-30,000, CPM.

PSM-700



- LOW COST
- TRANSISTORIZED
- PORTABLE, BATTERY OPERATED
- RUGGED CONSTRUCTION
- G-M TUBE, (Beta-Gamma)
- RANGES: 0-0.5mR/hr, 0-5mR/hr, 0-50mR/hr.

PSM-790 RADIOGRAPHY SURVEY METER



- LOW COST
- MEETS AEC and AGREEMENT STATES SPECIFICATIONS
- RUGGED and RELIABLE
- 1000 mR/hr (1R/hr) TOP RANGE
- SOLID STATE CIRCUITRY
- LONG LIVED EON HALOGEN QUENCHED DETECTOR
- PORTABLE, BATTERY OPERATED
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DOSIMETERS and CHARGER



- LOW COST
- DIRECT READING, GAMMA and X-RAY
- RUGGED CONSTRUCTION
- POCKET SIZE
- AVAILABLE IN DIFFERENT RANGES
- SPECIAL PURPOSE DOSIMETERS AVAILABLE, TISSUE EQUIVALENT, LOW ENERGY
- HERMETICALLY SEALED

MINI-RAD



- LOW COST
- RUGGED METAL CASE
- MINATURE
- X-RAY and GAMMA
- METER READOUT and AURAL MONITORING
- 20 KEV - TO 2 MEV RESPONSES
- SEPARATE BATTERY COMPARTMENT
- SAFETY BELT CLIP
- DUAL RANGE .5-50mR/hr and .05-5R/hr (Approx. logarithmic)

RAW-1



- LOW COST
- RUGGED METAL CASE
- MINIATURE
- X-RAY and GAMMA
- AUDIBLE ALARM
- SEPARATE BATTERY COMPARTMENT
- SAFETY BELT CLIP



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- SURVEY INSTRUMENT MODEL 760
- SURVEY INSTRUMENT MODEL 700
- SURVEY INSTRUMENT MODEL 790
- DOSIMETER and CHARGER
- MINI-RAD
- RAW-1
- RADIOACTIVITY ASSAYER CRA-1
- Add my name to your mailing list.

In Vivo Gamma Detection

Completely mobile.

- Thyroid Uptake
- Cardiac Output
- Clearance Studies

ADAC MUS-10 Mobile Uptake System



Features

- Complete mobility—large casters for easy movement and unique counterbalanced probe arm for fast and easy positioning.
- All solid state electronics.
- Automated isotope selection by single switch setting.
- Logarithmic rate meter allows peaking of system over 5 decades of counting rate.
- Self contained high voltage power supply eliminates high voltage cables.

System Components

The complete MUS-10 system consists of the following components:

- Spectrometer/Scaler, Model SS-101
- Single Probe Stand on Wheels, Model SPS-4
- Gamma Probe, Model PA-6

Hard Copy Output (Optional)

- Teleprinter on Mobile Cart, Model ASR-33
- ADAC Lister, Model ADL-150

The MUS-10 is a compact, versatile and low cost gamma detection/recording system featuring a combination spectrometer and scaler with superior solid state performance characteristics. It is designed for easy gathering and recording of examination data in single probe applications. The probe and electronics move easily on a single stand from one location to another. Even the optional hard copy print-out (either teletype or lister) moves easily with the system.

The MUS-10 may be used in both in vivo and in vitro studies. For in vivo, it may be used for thyroid uptake, cardiac output and isotope clearance studies, such as kidney and liver.

For in vitro applications, a well counter may be adapted to the SS-101 Spectrometer/Scaler to perform T3/T4 and RIA tests.

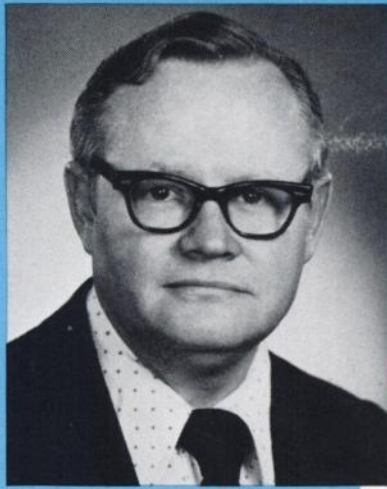
Write or call for a copy of our MUS-10 brochure.

ADAC, the Mednet Company
ANALYTICAL DEVELOPMENT ASSOCIATES CORPORATION

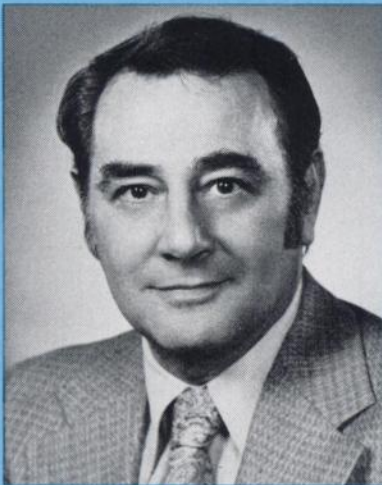
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408/255-6353





James J. Finn
Vice President/General Manager

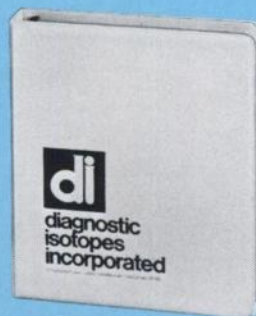


Emil Grossman
Marketing Director

***Sometimes you have
to go to the TOP
to get to the
BOTTOM of things***

Getting to the bottom of things is one of the nice parts of dealing with Diagnostic Isotopes. When you have a question that requires an immediate, authoritative answer, you can get it. Just dial (201) 825-2310 and ask for our Vice-President, Jim Finn or Emil Grossman, our marketing director. You'll get through quickly and receive a prompt reply to your question.

Of course, there are other good reasons for depending upon Diagnostic Isotopes for your radiopharmaceuticals—such as the quality and stability of our products, and the modest prices. If you would like to know more about our company and products, please call or write for our comprehensive new catalog.



di

diagnostic isotopes incorporated

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**the image quality
and exact
diagnostic format
you need**



Searle Micro Dot Imager

Static, dynamic & whole body imaging ... 15 formats, 3 film sizes

The Searle Micro Dot Imager offers Pho/Gamma users a versatile display system for single-organ or whole body imaging using economical X-ray film. Three film sizes and 15 image formats let you choose the exact format best suited for any study. State-of-the-art optics and electronics put as many as 80 images on one film with single-image fidelity. You can even mix static, dynamic and different size images on the same sheet of film. An exclusive, lightweight cassette design speeds and simplifies loading and unloading of film.

The Micro Dot provides distinct, well-focused scintidots in all image sizes; it gives you superior imaging clarity, constant focus and freedom from astigmatism regardless

of dot intensity and location. Absolute exposure control — with pushbutton settings for routine studies — assures correct, repeatable exposures from day to day and month to month in all image sizes.

Designed for clinical utility and operational simplicity, the Micro Dot Imager is the most complete display system available for the Pho/Gamma Scintillation Camera. For more information — including complete specifications — just write or phone your Searle representative. He'll be glad to show you how it can add unmatched versatility, convenience and economy to your laboratory's gamma imaging capabilities.

SEARLE

Searle Radiographics Inc.

Subsidiary of G. D. Searle & Co.

2000 Nuclear Drive, Des Plaines, Illinois 60018

Phone 312-298-6600

QUALITY ANTISERA AND REAGENTS FOR THYROID HORMONE RIA

Endocrine sciences T3-38 and T4-15 thyroid hormone antisera offer:

Increased sensitivity and specificity

Assay times less than 5 hours*

Low sample volume requirements:

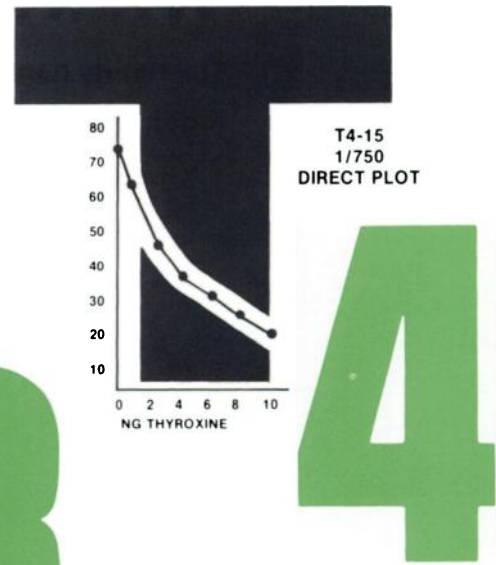
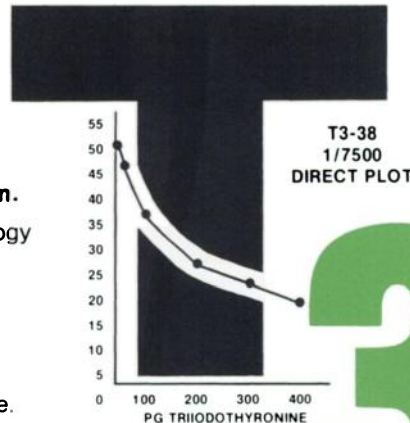
Only 0.1 ml for T3-38*
Only 0.02 ml for T4-15*

Stability: Freeze-dried antisera are stable indefinitely if stored at -10°C, after reconstitution.

Proven Endocrine Sciences methodology supplied with each antisera.

Each vial sufficient for the immunoassay of 500 tubes.*

Expert technical assistance: experienced Endocrine Sciences professionals always readily accessible.



T3-38 and T4-15 are specific, high-affinity reagents developed for the radioimmunoassay of triiodothyronine (T₃) and thyroxine (T₄). Tested through routine use in our own clinical laboratories for over a year, T3-38 and T4-15 have been used in a simple RIA to determine T₃ and T₄ directly in plasma. The higher sensitivity and specificity of these antisera used in direct RIA offer distinct advantages over methods involving extraction and competitive protein binding. Increased sensitivity alone allows more precise measurement of T₃ and T₄ at critical lower physiological concentrations. Greater accuracy and precision are attained through elimination of errors associated with extraction and other sample processing.

Sensitivity: Standard curves normally obtained with T3-38 at a dilution of 1/7500 and T4-15 at a dilution of 1/750 are shown. Range and sensitivity of each curve were selected to measure generally encountered physiological concentrations of each hormone using sample volumes indicated above. The range of each can be adjusted to meet individual requirements by varying the dilution of the respective antiserum.

Specificity: T3-38 and T4-15 demonstrate very low cross-reactivity.

Multiple sample sizes with either T3-38 or T4-15 exhibit consistent linearity.

Hormone levels obtained in direct plasma RIA using T3-38 or T4-15 and those obtained after solvent extraction show no significant differences.

Recovery of known amounts of T₃ or T₄ added to plasma samples is excellent.

Comparison of RIA using T4-15 with competitive protein binding:

Mean plasma T ₄ by RIA	9.5 ug%
Mean plasma T ₄ by CPB	9.0 ug%

DIRECT PLASMA RIA

Today there is no better way to measure thyroid hormone levels in plasma than by radioimmunoassay, but RIA is only as reliable as the antiserum employed.

Clinical and research laboratories have been using Endocrine Sciences specific thyroid hormone antisera for more than a year now with complete confidence. Why? Because our T₃ and T₄ antisera were developed to meet exacting standards of specificity and sensitivity. Our customers know that each batch of T₃ and T₄ antiserum undergoes extensive quality control testing before its shipment. Users of our T₃ and T₄ antisera also know that our biggest customer is Endocrine Sciences Clinical Services Laboratory where these antisera must meet our own rigid standards daily.

Our antisera and reagents are offered as components rather than kits, because we believe in allowing more sophisticated users greater flexibility in methodology without incurring the additional expense of unnecessary reagents. Optimal sensitivity and reliability are easily attained using recommended procedures, thus eliminating the variability associated with most RIA kits. Check our specifications, then contact us for complete technical bulletins or to arrange for shipment.

Other Endocrine Sciences quality RIA reagents including T₃ and T₄ free plasma, I¹²⁵ hormones, and purified bovine serum albumin are also available. Inquiries should be directed to our products division.

*Based on use of RIA procedure similar to that provided by Endocrine Sciences.

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CALIFORNIA 91356 • TELEPHONE: 213/345-6503

What's new:

The handy handle.
A quick-opening, peel-off top.



Catalog No. NRP-196



Technetium Tc 99m Generator

The parent Molybdenum Mo 99 has been prepared from irradiation of stable molybdenum.

CAUTION: Federal (U.S.A.) law prohibits dispensing without prescription. Must be administered only by qualified personnel in conformity with applicable regulations of appropriate governmental agencies.

CAUTION: Generators received in advance of the calibration date contain correspondingly greater levels of rad activity than the calibration amount (consult Molybdenum Mo 99 decay chart on label). This factor should be considered in its handling and use.

Catalog No. NRP-196

What isn't:

It's completely pre-assembled, ready to use.

The simple, fast procedure – charge, elute.

High concentration Tc 99m.

Extra high concentration from fractional elution.

Every unit is tested for sterility and non-pyrogenicity.



New England Nuclear Radiopharmaceutical Division

Atomlight Place, North Billerica, Mass. 01862
Telephone (617) 667-9531

Canada: NEN Canada Ltd., Dorval, Quebec, H9P-1B3
Tel: (514) 636-4971, Telex: 05-821806
Europe: NEN Chemicals GmbH, D6072 Dreieichenhain,
W. Germany, Siemensstrasse 1
Tel: Langen (06103) 85035

L-selenomethionine



naturally safer

Our selenomethionine is biosynthetically produced. Because it is "all natural", it has inherent advantages over chemically synthesized pancreas imaging agents which are racemic and which may have a lower specific activity. Our L-selenomethionine has an average specific activity of about 100 mCi/mg (successive batches contained 102, 100, 92.7 and 100 mCi/mg respectively). Much smaller amounts (from 1.25 to 2.50 micrograms) are required to obtain a pancreas image.

True, it is not carrier-free, but a 2.50-microgram injection of selenomethionine compared to 230 milligrams of methionine present in a glass of milk, for instance, is very very small. Why administer more when less will do?

Write or call for descriptive literature on our "all natural" selenomethionine.

Product Description

L-Selenomethionine Se 75 Injection is a sterile, pyrogen-free solution of selenomethionine in sodium chloride injection.

Suggested Dosage Range

125 to 250 microcuries or 1.8 to 3.5 microcuries/kilogram body weight.



CIS Radiopharmaceuticals, Inc.
5 DeANGELO DRIVE/BEDFORD, MA. 01730/Tel. (617) 275-7120

GAMMA CAMERA CALIBRATION KIT

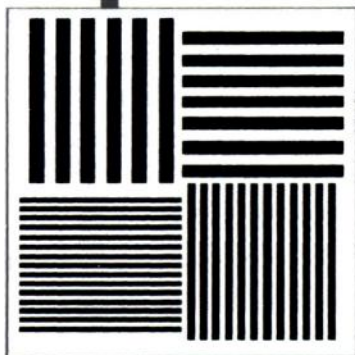
The radioactive sources and phantom of the AECL Gamma Camera Calibration Kit provide an effective means of routinely checking the vital characteristics of your camera system.

Sources are safe, light and easy to carry in the attractive carrying case provided.

Sources are approved for licensing in U.S.A. and Canada.

FLOOD FIELD SOURCE

A rapid and convenient way of making the daily check of your camera response. It is a flat plastic disc 12 inches in diameter containing 3 mCi of Gadolinium-153 (100 KeV photopeak, 242 day half life) dispersed uniformly to give an output better than $\pm 5\%$ over the whole surface.

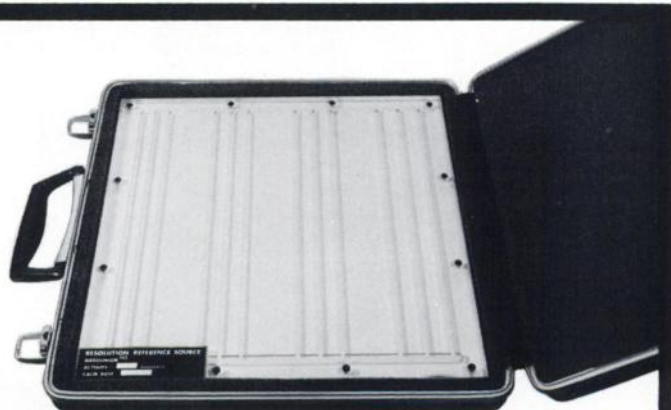


BAR PHANTOM Used with a Flood Field Source to provide an efficient check of the inherent and system resolution of your camera system. It can also be used to check image size and linearity.

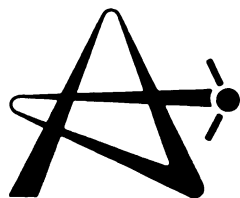
The Bar Phantom consists of four groups of lead bars embedded in a plastic holder 13.5 inches square and 0.37 inches thick. The bars are 0.125 inches thick and 0.500, 0.375, 0.250 and 0.187 inches wide respectively. The spacing between the bars is equal to the width of the bars for each group.

RESOLUTION REFERENCE SOURCE

A convenient way of checking the resolution of your gamma camera and scanner. The source contains a grid of radioactive lines which vary in spacing. Most cameras should be able to resolve the finest part of the grid. By adjusting the distance of the source from the collimator, the depth resolution of your camera can also be measured. Total activity of the source is 3 mCi of Gadolinium-153.



74-1



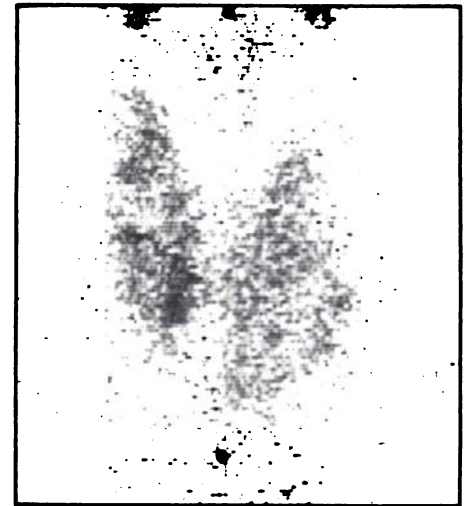
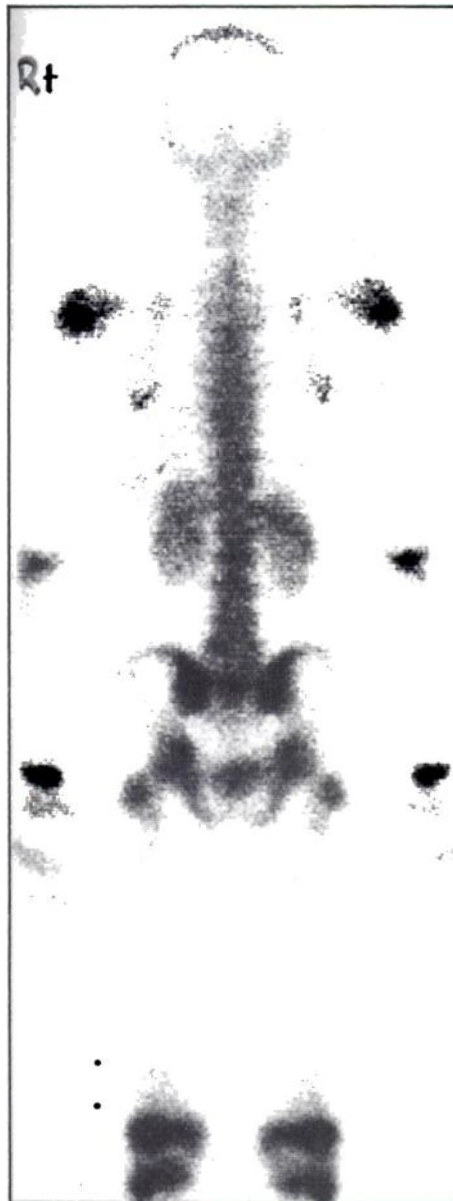
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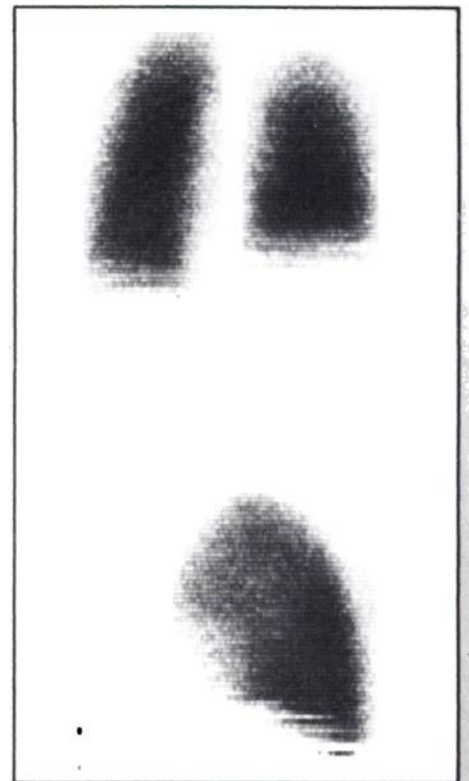
The more scans you do



12-year old boy—3:1 minification.



Enlarged thyroid.



Lung or liver/spleen studies easily done because of 24 inch field of view.

**Maxiscan™ whole body scanner:
proven in-hospital performance
you can see.**

the more it makes sense.

If you're considering the use of a gamma camera and attachments for whole body scans, you should be aware of an interesting phenomenon. What begins as two to three whole body scans weekly soon mushrooms to three or more per day. And while the camera is tied up with these scans, other exams are delayed. Department scheduling can be woefully disrupted.

Consider the GE alternative. The Maxiscan™ two-probe whole body scanner. One patient position. A single pass delivers two coincident views for more definitive diagnostic information. And, instrument component cost analysis demonstrates lower cost per scan.

Skeletal surveys cover a full 24 x 80 inches. The image, minified to fit 14 x 17 inch film, permits location and diagnosis

of bone metastases, without a series of small area scans. For any single organ, select full size views or minifications of 2:1, 3:1, 4:1, or 5:1. Up to four scans may be displayed on one film, with precise quadrant placement and no image overlap.

Tiltable probes optimize brain scan views. Vertical scan option permits scanning of seated patients and vertex views of the brain. A mobile table can be equipped with automatic raising and lowering, providing easier patient positioning and transfer and numerous other advantages over fixed tables.

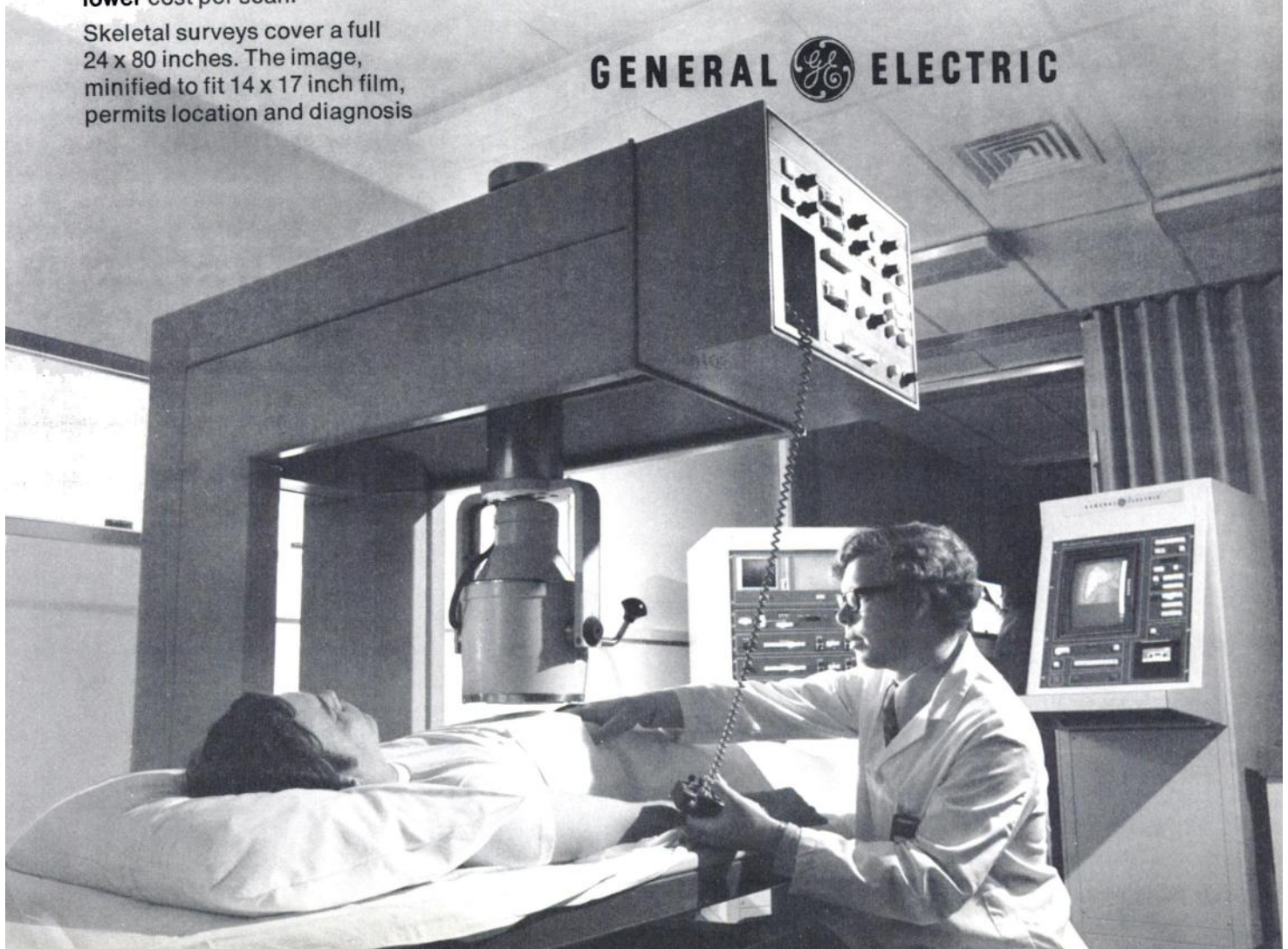
All scans can be viewed using standard film photorecording. Or, with GE's optional Video-

display processing unit, you can see patient data in B&W or fully functional color. Image contrast and density are independently selectable, and are not affected by such variables as patient-to-patient count rate differences and scanning speed.

Why not arrange to see the Maxiscan unit's total performance demonstrated in a movie, together with in-hospital case studies. Call your GE representative.

General Electric
Medical Systems,
Milwaukee and Toronto.

GENERAL  ELECTRIC



New diphosphonate bone scanning agent offers high target to non-target ratio, rapid blood clearance

Your confidence in detecting bone lesions depends on the ability of the imaging agent you use to deliver consistently excellent scans. Three hours post injection, 40-50% of ^{99m}Tc -labeled OSTEOSCAN has been taken up in the skeleton. Only 6% remains in the blood. The remainder is excreted in the urine. Together with the agent's low soft tissue uptake, the high target to non-target ratio and rapid blood clearance result in clear delineation of skeletal lesions.

OSTEOSCAN consistently provides high labeling efficiency (greater than 95% *). Because of its stable P-C-P bond, OSTEOSCAN resists *in vitro* hydrolysis and *in vivo* dissociation. This helps to minimize soft tissue uptake that can impair diagnoses.

Result: Consistently excellent scans—and confidence that detectable bone lesions will be imaged.

For product and ordering information, call Mr. Arnold P. Austin at (513) 977-8547 or write: *Procter & Gamble, Professional Services Division, P.O. Box 171, Cincinnati, Ohio 45201.*

*Thin Layer Chromatography (Cellulose acetate/85% methanol)

A. 15 mCi ^{99m}Tc -OSTEOSCAN
Scanned 3.5 hr post injection
Low-Energy, All-Purpose Collimator
Speed: 32 cm/min, Length: 173 cm, Width: 60 cm
Anterior: 834,518 counts/1070 sec (17.8 min)
Comments: Metastatic meningioma

B. 15 mCi ^{99m}Tc -OSTEOSCAN
Scanned 4 hr post injection
High Sensitivity Collimator
Speed: 32 cm/min, Length: 170 cm, Width: 60 cm
Posterior: 961,752 counts/1054.3 sec (17.6 min)
Comments: Cancer of breast. Polaroid image; posterior view taken with detector under table

C. 15 mCi ^{99m}Tc -OSTEOSCAN
Scanned 4 hr post injection
Low-Energy, All-Purpose Collimator
Speed: 48 cm/min, Length: 175 cm, Width: 60 cm
Anterior: 927,833 counts/737.4 sec (12.3 min)
Comments: Patient being treated for a lymphoma

(Above scans made with Searle Radiographics Pho/Gamma Scintiscan™)



A



B



C



PROCTER & GAMBLE

OSTEOSCAN[®]

(5.9 MG DISODIUM ETIDRONATE
0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT

See following page for brief summary of package insert.



PROCTER & GAMBLE
OSTEOSCAN
 (5.9 MG DISODIUM ETIDRONATE
 0.16 MG STANNOUS CHLORIDE)
 SKELETAL IMAGING AGENT



Brief summary of Package Insert. Before using, please consult the full Package Insert included in each kit.

DESCRIPTION

Each vial of OSTEOSCAN contains 5.9 mg disodium etidronate and 0.16 mg stannous chloride as active ingredients. Upon addition of ADDITIVE-FREE ^{99m}Tc -pertechnetate, these ingredients combine with ^{99m}Tc to form a stable soluble complex.

ACTIONS (CLINICAL PHARMACOLOGY)

When injected intravenously, ^{99m}Tc -labeled OSTEOSCAN has a specific affinity for areas of altered osteogenesis. Areas of bone which are undergoing neoplastic invasion often have an unusually high turnover rate which may be imaged with ^{99m}Tc -labeled OSTEOSCAN.

Three hours after intravenous injection of 1 ml ^{99m}Tc -labeled OSTEOSCAN, an estimated 40-50% of the injected dose has been taken up by the skeleton. At this time approximately 50% has been excreted in the urine and 6% remains in the blood. A small amount is retained by the soft tissue. The level of ^{99m}Tc -labeled OSTEOSCAN excreted in the feces is below the level detectable by routine laboratory techniques.

INDICATIONS

OSTEOSCAN is a skeletal imaging agent used to demonstrate areas of altered osteogenesis.

CONTRAINDICATIONS

None.

WARNINGS

This radiopharmaceutical should not be administered to patients who are pregnant or lactating unless the information to be gained outweighs the potential hazards.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

The ^{99m}Tc -generator should be tested routinely for molybdenum breakthrough and aluminum. If either is detected, the eluate should not be used.

PRECAUTIONS

Both prior to and following ^{99m}Tc -labeled OSTEOSCAN administration, patients should be encouraged to drink fluids. Patients should void as often as possible after the ^{99m}Tc -labeled OSTEOSCAN injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation.

As in the use of any other radioactive material, care should be taken to insure minimum radiation exposure to the patient, consistent with proper patient management, and to insure minimum radiation exposure to occupational workers.

ADVERSE REACTIONS

None.

DOSAGE AND ADMINISTRATION

The recommended adult dose of ^{99m}Tc -labeled OSTEOSCAN is 1 ml with a total activity range of 10-15 mCi. ^{99m}Tc -labeled OSTEOSCAN should be given intravenously by slow injection over a period of 30 seconds within three (3) hours after its preparation. Optimum scanning time is 3-4 hours postinjection. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

**FOR INTERNAL
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 COUNT ON
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**More labs count on
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 any other.**

Scintillators are our business. We have the largest range available anywhere. Because they're our business, we make them in the tradition of integrity and quality craftsmanship.

We take pains to ensure consistency from batch to batch for repeatability. Our large range, the largest, offers unmatched versatility. World-wide acceptance gives an added boon—economy.

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epiphora or crocodile tears?

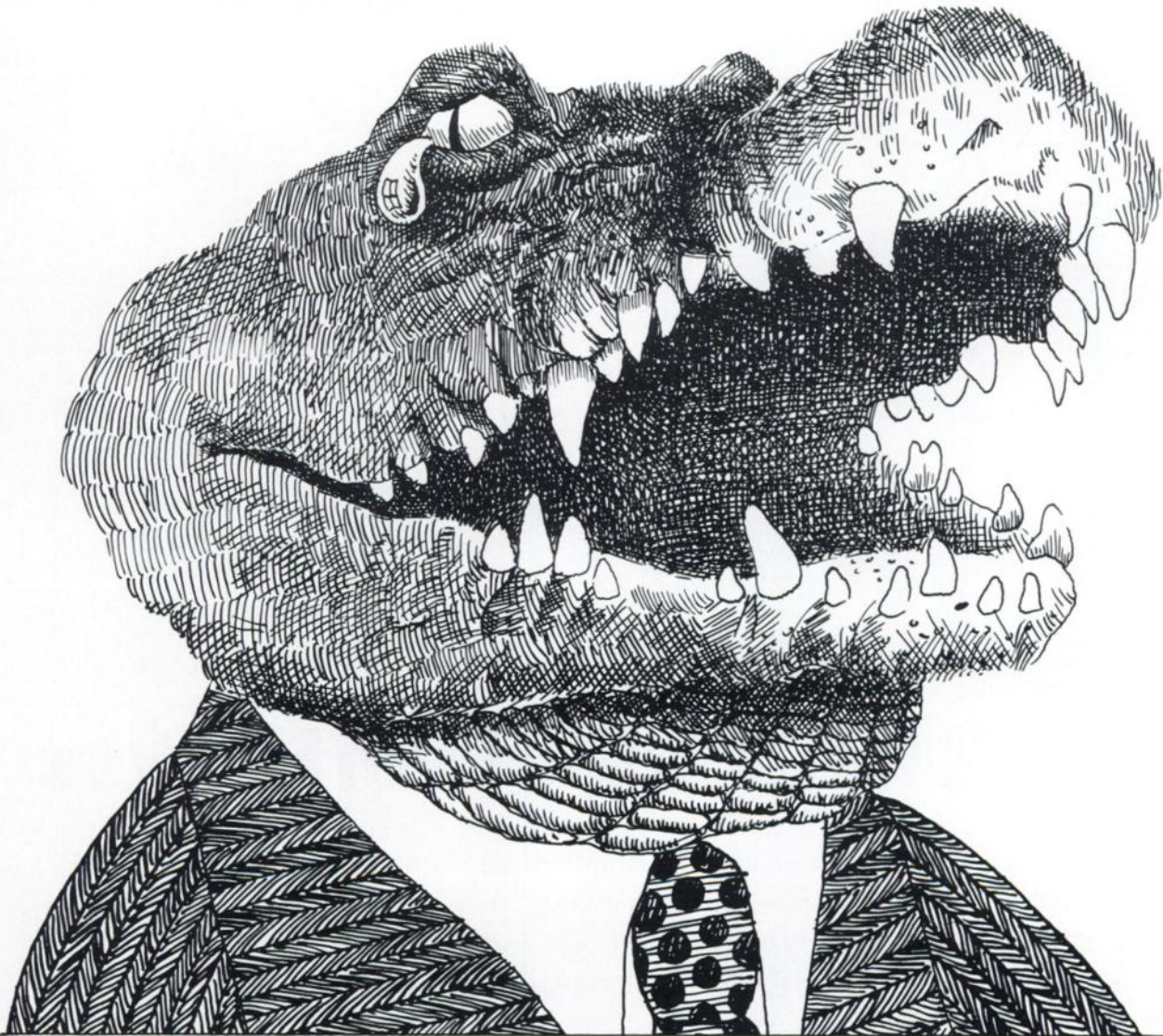
Find out with microscintigraphy, ophthalmology's new diagnostic tool to evaluate the patency of the lacrimal drainage system. All your nuclear medicine department needs is the new System 350 Micropinhole Collimator* from Dunn Instruments and you're in business. You simply trace a radioactive tear with the gamma camera. The technique is fast, safe and inexpensive, involving no increase in lacrimation, no cath-

*Patents Pending

erization of the canaliculi. This means no alteration of the physiology and anatomy, perhaps its major advantage. And, like all nuclear studies, you get hard copy records for future study and comparison. Microscintigraphy provides an accurate physiologic picture making it an excellent tool to study in vivo the dynamics of lacrimal drainage in all age groups. Best of all, it's painless. That's especially important when examining crocodiles.



**Dunn
Instruments Inc**



Send Crocodile Coupon to: Dunn Instruments Inc, 52 Colin P. Kelly Jr. Street, San Francisco, Ca. 94107 (415) 957-1600
Yes, I am requesting information (clinical reprints of lacrimal studies included) about the System 350 Micropinhole Collimator.

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**easy viewing
easy handling
easy filing**



with RADX Plastic Film Holders

Viewing and filing images generated by today's high-speed scintiphotography cameras don't have to be a problem. Simply organize and protect your film with RADX plastic film holders.

Easy to mount. Easy to view. Easy to file. The 35mm size holds three 6-frame (18 total) images in a 5 x 8 holder. The 70mm is available in two sizes. The 14 x 17 holds up to 25 images and the 8½ x 10½ holds up to 9 images. You can order these tough, durable transparent plastic holders in 100 sheet cartons or 500 sheet case quantities. Now that you know there's an easier way, call or write RADX. Send for samples and prices. Be sure to tell us your film size.

RADX
CORPORATION

When is a Dosecalibrator also a Dosecomputer?



When it's a RADX Mark V.

The RADX Mark V was designed specifically for Nuclear Medicine departments, with digital read-out and an oversize well-type ionization chamber for high statistical accuracy. No geometric errors. Impervious to barometric pressure changes.

Only the RADX Mark V dosecalibrator measures the activity of radionuclides from 1 μCi to 1000 mCi, then computes the exact volume needed for patient injection.

Programming the Mark V for various isotopes is error-free. You simply plug in a module for the isotope you are assaying. The Mark V may be customized to your specific needs by acquiring only the modules corresponding to the isotopes you are currently using. However

additional modules may be added at any time. Updating is simple and economical.

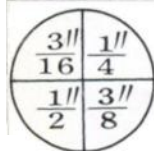
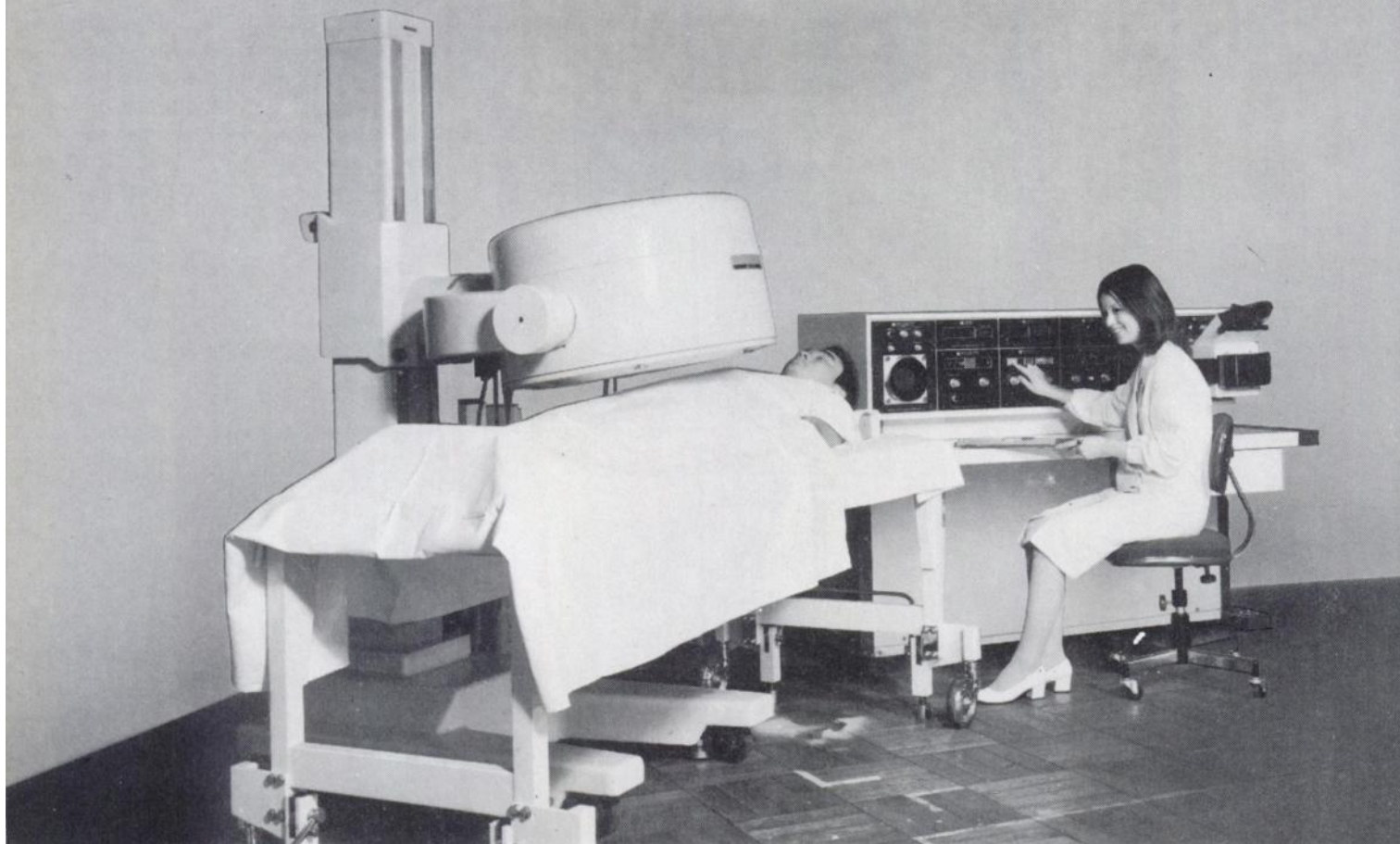
And as if all of this were not enough, RADX recognizes that a day without your Mark V is like a day without sunshine. If during the warranty period, your Mark V does not perform within stated specifications, RADX will air express you a loaner to use while yours is being repaired — at no charge.

Then consider that the Mark V costs much less than other dosecalibrators that do not provide all of these features. Now call RADX.

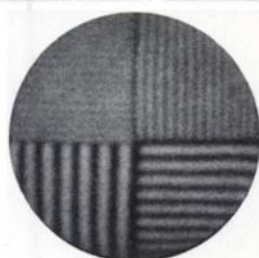
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P.O. Box 19164 • Houston, Texas 77024 • (713) 468-9628

A MAJOR ADVANCE IN NUCLEAR MEDICINE BY TOSHIBA



INTRINSIC RESOLUTION
99mTc, 999 K-counts, Window 20%



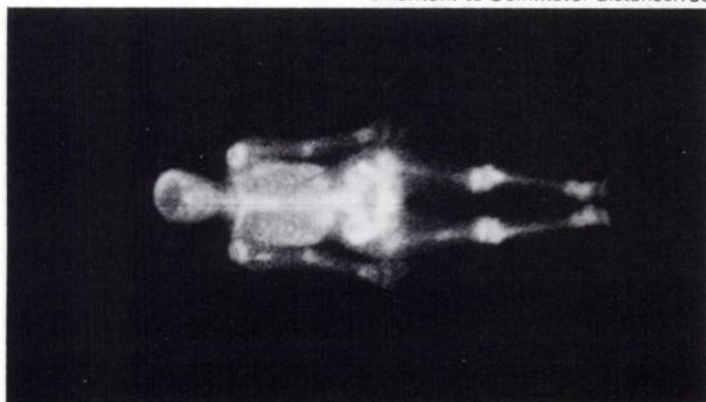
OVERALL RESOLUTION
99mTc, 999 K-counts, Window:20%
Collimator: Super High Resolution
Phantom to Collimator distance:10cm

Toshiba's Jumbo Gammacamera, model GCA-202, has an effective field of view 350mm in diameter. Other features include:

- * The ability to image a large organ alone or in combination with smaller organs.
- * No divergent collimator is needed.
- * Images with high resolution and sensitivity without distortion.

The Jumbo Gammacamera and its Whole Body Adaptor make whole-body-imaging possible in only ten minutes. Other advantages:

- * You get more time for other tests and diagnosis.
- * More accurate diagnosis.
- * Patients don't have to go through time-consuming examinations.



SORRY U.S.A.—GCA-202 is not available in your country.

Toshiba **TOSHIBA**
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Producer Goods Export Division
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From one simple test, two important results.

New Thyopac-5 is the first screening test which enables pathologists to perform a normalized thyroxine ratio (NTR) and a total thyroxine assay (T4) in the same vial. It thus separates simply, rapidly and precisely those patients with definite thyroid abnormalities from those with no dysfunction. After screening, Thyopac-3 and Thyopac-4 can be used to provide a more detailed diagnostic picture. In patients with *normal* thyroid function, Thyopac-5 automatically corrects for abnormal binding capacity, whether caused by unrelated clinical conditions such as pregnancy, hypoproteinaemia, or by medication such as oral contraceptives. Full details available on request.

- two independent results from one test
- flexibility of choice: 3 assay sequences
- samples withdrawn at equilibrium
- independent of time and temperature

Thyopac^{*}-5
a logical extension to
thyroid function testing



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Amersham

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In W. Germany: Amersham Buchler GmbH & Co., KG. Braunschweig.

2651 *Trade Mark

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You'll get exceptionally fast and reliable service, excellent delivery and applications assistance from some of the most knowledgeable people in the field of nuclear medicine.

We'd like to send you a price quotation and complete product information. You'll see why dollar for dollar you get the most performance from Elscint.

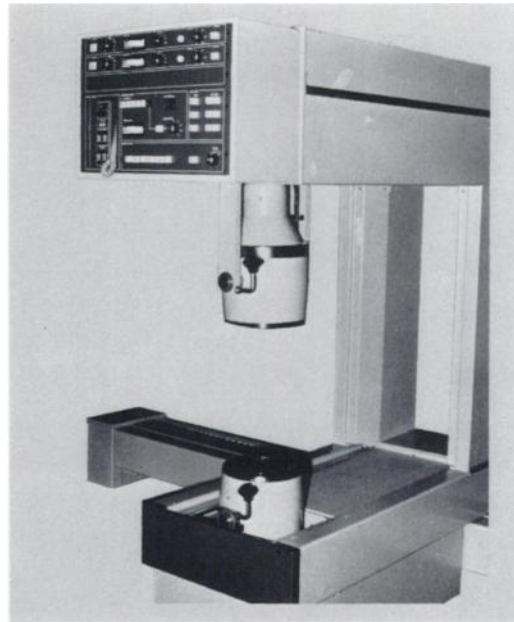
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We always give you good references

For Gamma Camera work



Sealed flood sources

To check uniformity and resolution (and for transmission imaging), we supply a choice of 2 sizes, 2 nuclides and 4 activities— ^{57}Co (2 and 3 mCi) and ^{133}Ba (0.5 or 1.0 mCi). Uniformity; the maximum acceptable variation in count rate, including statistical variations, is $\pm 2\%$ of the mean value. Sources are supplied for both conventional and wide field-of-view cameras. For maximum safety



The Radiochemical Centre
Amersham

and convenience, each uniformly loaded active plastic source is surrounded by inactive plastic and enclosed in a sturdy anodized aluminium casing. The storage case, supplied with each source, includes lead shielding.

Anatomical position marker sources

These are available in a choice of 3 nuclides (^{57}Co , ^{133}Ba and ^{113}Sn) and 2 activities (10 or 100 μCi). Features include welded plastic construction, point source geometry with visible active centre and colour coding for quick identification of both nuclide and activity. Sources are packed in sets of 3 in shielded boxes, and replacements are available separately.

For Dose Calibrators

Checking sources

Welded, stainless steel primary source in plastic vial-shaped holder for checking day-to-day consistency in the operation of isotope assay calibrators; supplied in shielded wooden outer case for safety and convenience.

Sources available are ^{137}Cs (250 μCi) and ^{226}Ra (100 μCi).

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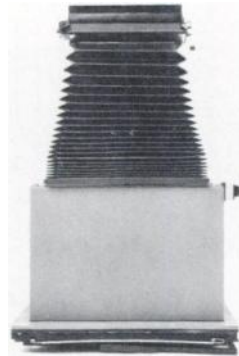
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Multi-Imager 1 uses the CRT of the gamma camera to record static, dynamic, whole body, and physiological function gated imaging procedures on transparency format. The system consists of an electronic programmer and a 5" x 7", 8" x 10", or 11" x 14" format oscilloscope camera.

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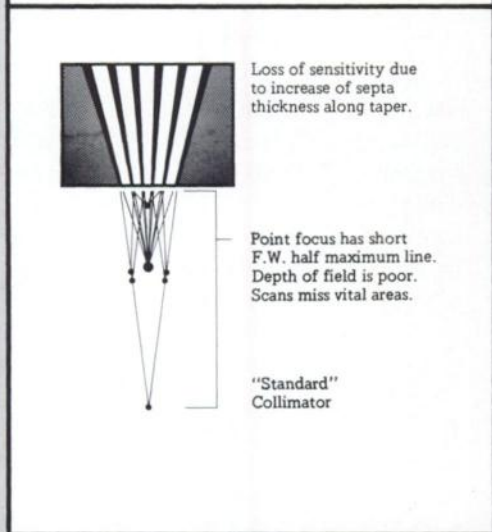
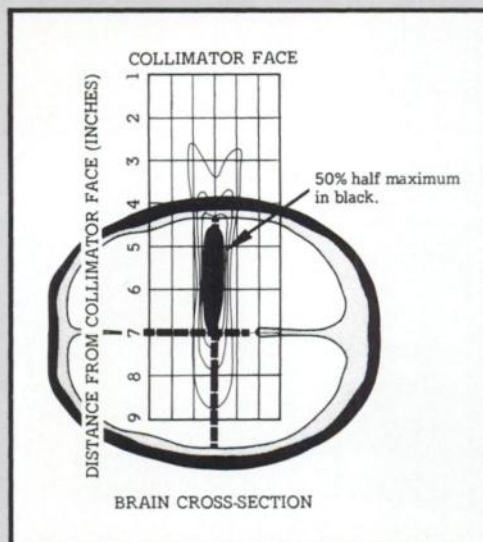
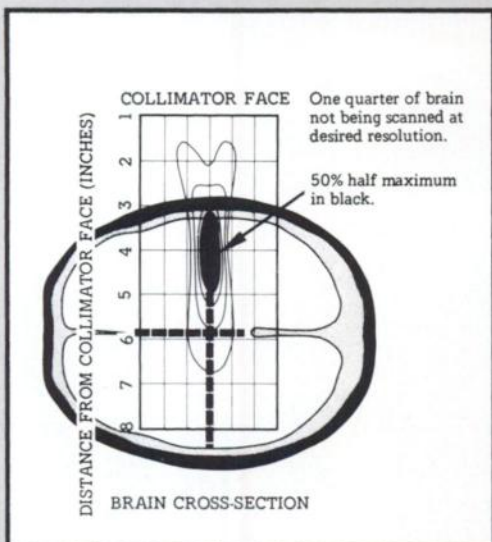
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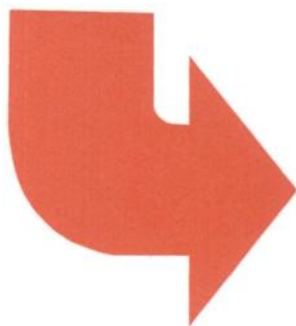
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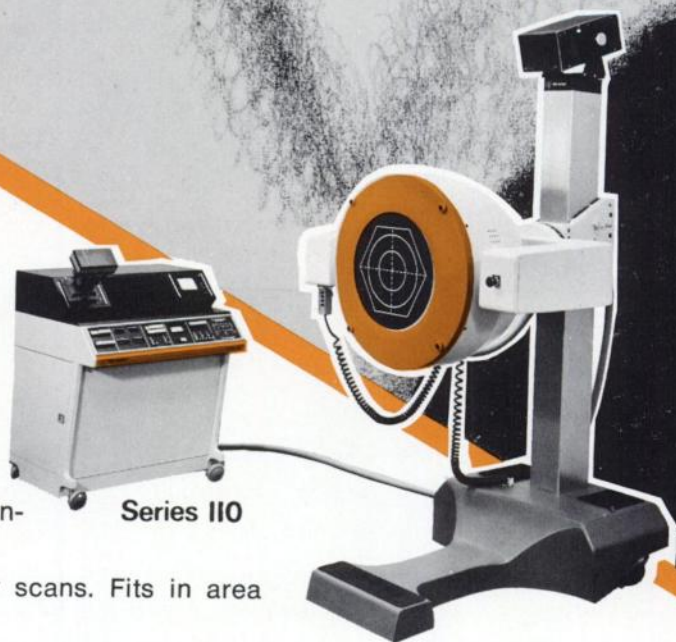
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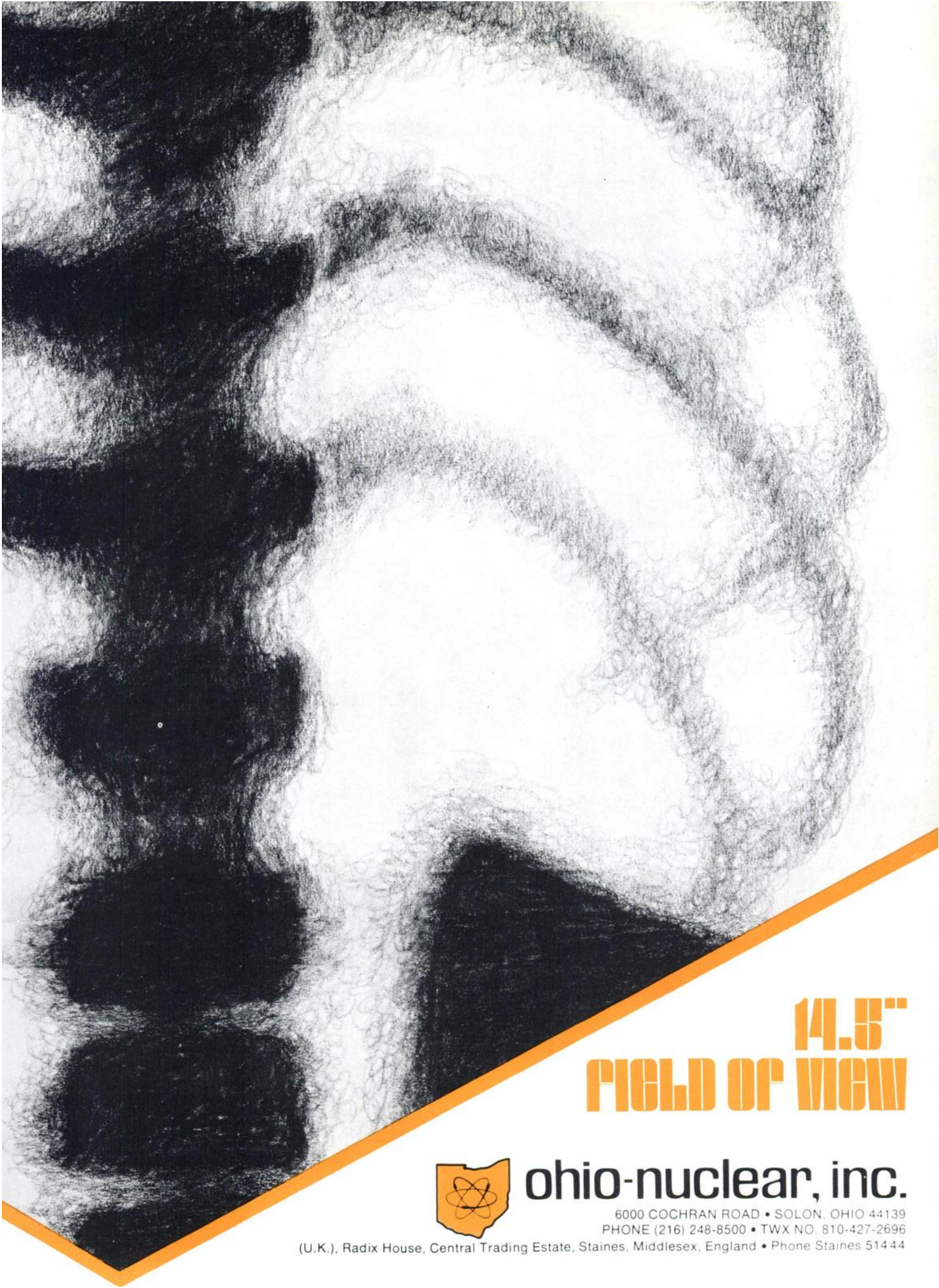
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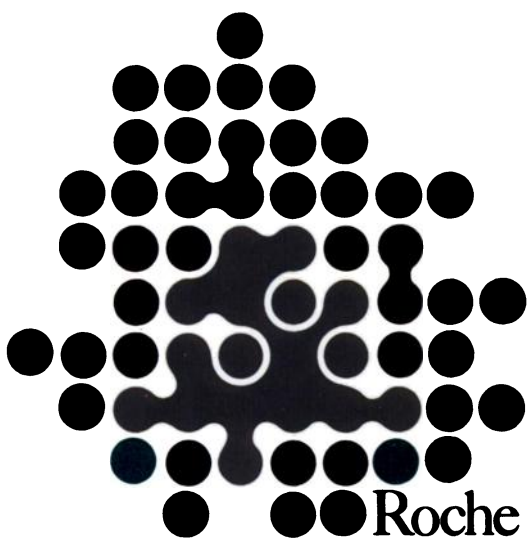
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Roche Diagnostics announces
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CEA-ROCHE

Carcinoembryonic Antigen assay

CEA-ROCHE: a diagnostic test of major clinical significance

Roche has long had a serious commitment to cancer research which has resulted in several important chemotherapeutic agents. Now, working in conjunction with the original researchers and with investigators at over 100 leading medical centers throughout the United States, England and Canada, Roche Research has adapted, refined and evaluated CEA-ROCHE, an *in vitro* test for the carcinoembryonic antigen (CEA) found in a variety of malignant and nonmalignant conditions. An extensive collaborative study, under way for almost three years, has tested CEA-ROCHE in over 35,000 assays in more than 10,000 patients using identical protocols, procedures and reporting methods.¹ Because of the importance of this assay, one of the most thorough and well controlled research programs conducted for a

diagnostic product was undertaken. The following data were derived from these studies.

Decreases in CEA titers were reported to be associated with effective therapy.²⁻⁷ Serial determinations of CEA proved to be of value in assessing the condition of the patient during therapy.^{3-6,8} Persistent increases in titer were associated with a lack of response to therapy or a recurrence of disease; in some cases, the titer rise preceded clinical signs by as much as three months.^{9,10} Except for primary pancreatic and colorectal carcinoma, titers above 20 ng/ml were, with very rare exceptions, associated with the presence of metastatic disease.¹⁰ However, metastatic disease may also occur when the CEA titer is below 20 ng/ml.

Nonmalignant inflammatory diseases in their active state may give rise to CEA titers above 2.5 ng/ml. These titers usually drop below 2.5 ng/ml when these diseases are in remission.^{7,10-12}

In a special study of 883 patients, cigarette smoking with titer elevations was associated with atypical sputum cytology.¹³ Decreases in CEA titer often occurred within 30 to 60 days after cessation of smoking.

It must be stressed that test results and data arrived at using the CEA-ROCHE assay cannot be compared with results obtained by any other method or where other reagents are used.

CEA-ROCHE: limitations

CEA-ROCHE is not recommended as a screen to detect cancer. CEA titers are not an absolute test for malignancy, nor for a specific type of malignancy. In the management and diagnosis of the patient suspected or known to have cancer, all other tests and procedures must continue to be given emphasis. CEA titers less than 2.5 ng/ml are not proof of the absence of malignant disease.

CEA-ROCHE: nature of assay

CEA-ROCHE uses the Hansen Z-gel method and combines the specificity of an immunological procedure and the sensitivity of radiochemistry. It provides results at nanogram (billionth of a gram) levels and detects CEA levels as low as 0.5 ng/ml. Briefly, the principle of CEA-ROCHE is as follows: CEA is extracted from the plasma specimens and allowed to react with specific CEA antiserum. ^{125}I -CEA is then added and allowed to react with the remaining CEA antiserum. The ^{125}I -CEA bound to antibody is separated from excess free ^{125}I -CEA with zirconyl phosphate gel and the bound ^{125}I -CEA determined by counting in a gamma scintillation spectrometer. The partition of ^{125}I -CEA between bound and free fractions is a function of the amount of CEA present in the plasma. The amount of CEA present in the plasma sample is determined from a standard inhibition curve.

CEA-ROCHE: the test kit

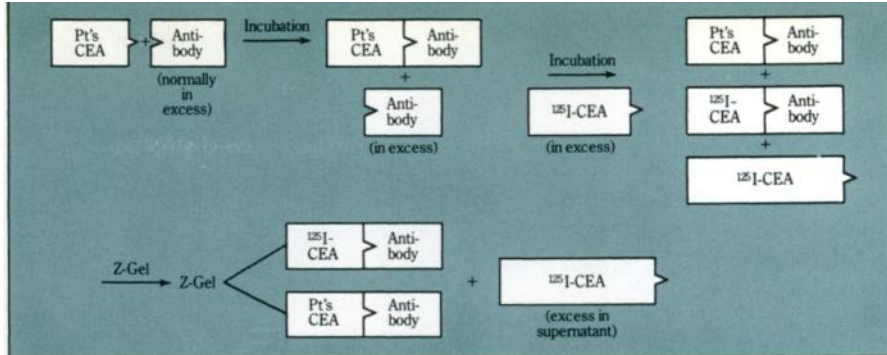
Each kit contains CEA antiserum, CEA standard, ^{125}I -CEA, EDTA buffer stock solution and zirconyl phosphate gel (Z-gel). All components are supplied in excess to assure sufficient material for at least 100 tubes (or for approximately 40 patient plasma samples assayed in duplicate with the necessary controls). Because of the stringent quality control procedures used in the production of CEA-ROCHE, you are assured of consistency from lot to lot. The CEA-ROCHE™ kit has a 17-day shelf-life and should be stored at 4° to 8° C. Store EDTA buffer and Z-Gel at 15° to 30° C.

■ materials available

Control specimens in four titer ranges (0-2.5 ng/ml, 2.6-5.0 ng/ml, 5.1-10.0 ng/ml, greater than 10.0 ng/ml); 2.5-ml dispensers for Z-gel bottles; presealed dialysis bags and ^{125}I -CEA to refurbish kits which may have expired are all available separately from Roche Diagnostics.

■ equipment needed

The laboratory must have the following equipment to perform CEA-ROCHE: micropipettes;



CEA-ROCHE Utilizing the Hansen Z-Gel Method

vortex-type mixer; horizontal-head centrifuge; gamma scintillation spectrometer and access to approximately 150 liters/100 tubes of distilled or deionized water.

■ AEC license required

Because CEA-ROCHE contains radioactive material, an AEC or agreement State license is required. A copy of your license or completed License Declaration Form available from Roche Diagnostics is required before shipment can be made.

ROCHE DIAGNOSTICS: provides these special services to laboratories using CEA-ROCHE

Because of the clinical significance of the CEA-ROCHE assay and the critical area of medicine involved, Roche Diagnostics will provide laboratories wishing to run this test with advice and technical assistance in setting up the necessary facilities. Should any questions arise during testing, Roche Diagnostics will be pleased to provide further advice and assistance. A plasma evaluation service and consultation on volume processing are also available.

In addition, two in-depth brochures have been prepared:

1. CEA-ROCHE Clinical Monograph — providing complete clinical information.
2. CEA-ROCHE Procedure Manual — providing complete technical information.

Either or both may be obtained by

completing and returning the reply coupon below.

Finally, Roche Diagnostics will be sponsoring an extensive educational program to physicians, including audio, visual and print material.

references:

1. Third Conference, Carcinoembryonic Antigen (CEA) Test Collaborative Study, Hoffmann-La Roche Inc., April 21, 1973
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3. Holyoke ED, et al: *Ann Surg* 176:559-564, 1972
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10. Data available on request from Hoffmann-La Roche Inc, Nutley NJ
11. Rule A, et al: *New Eng J Med* 287:24-26, 1972
12. Moore TL, et al: *JAMA* 222:944-947, 1972
13. Hansen HJ, et al: *Human Pathology*. In Press

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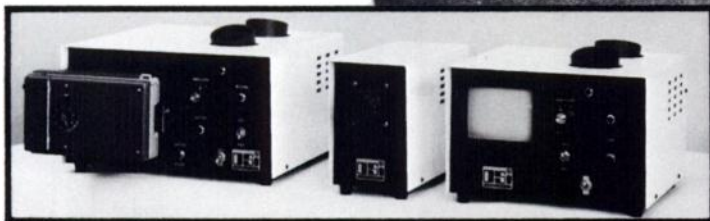
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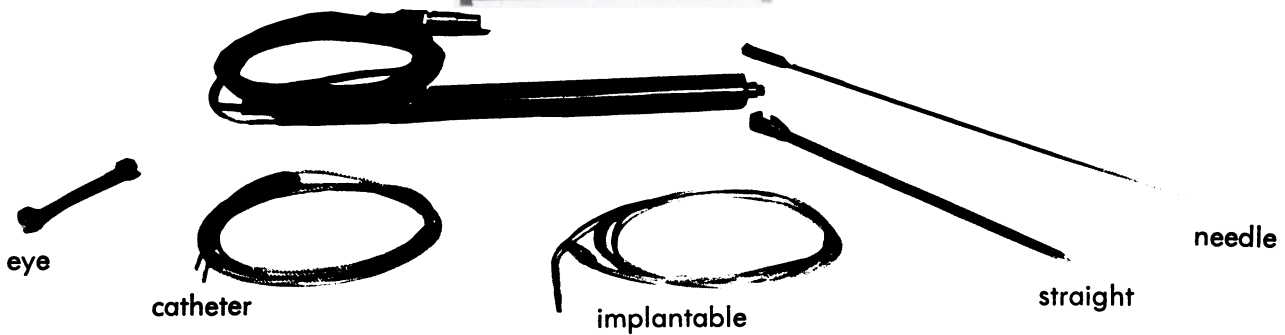
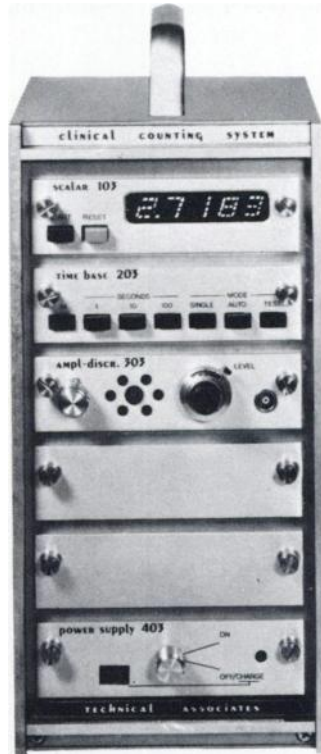
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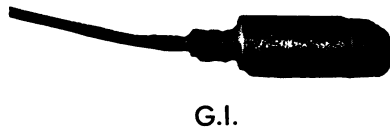
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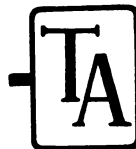


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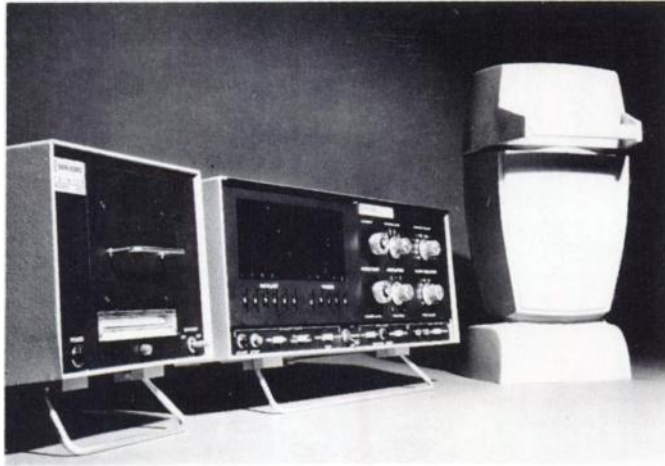
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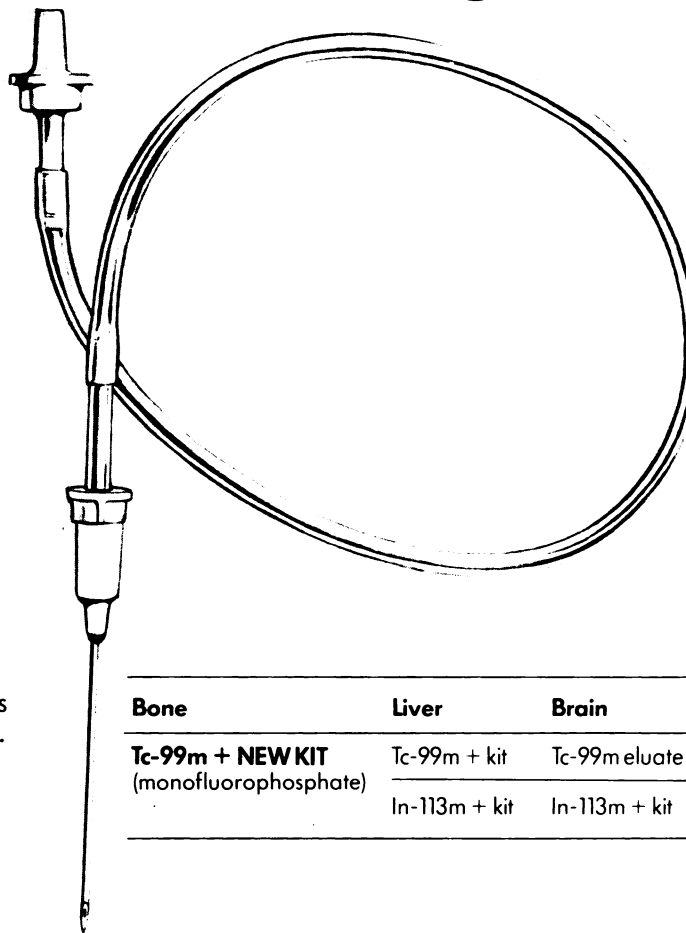
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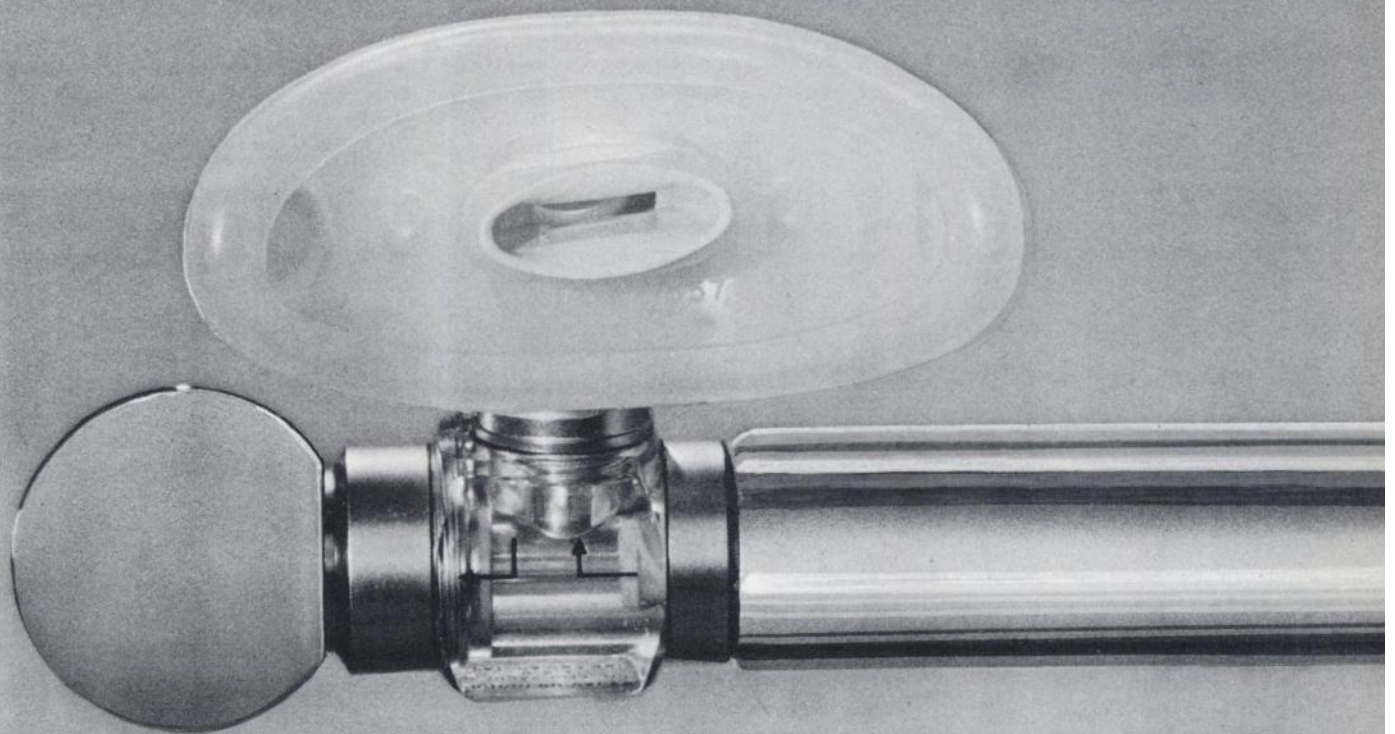
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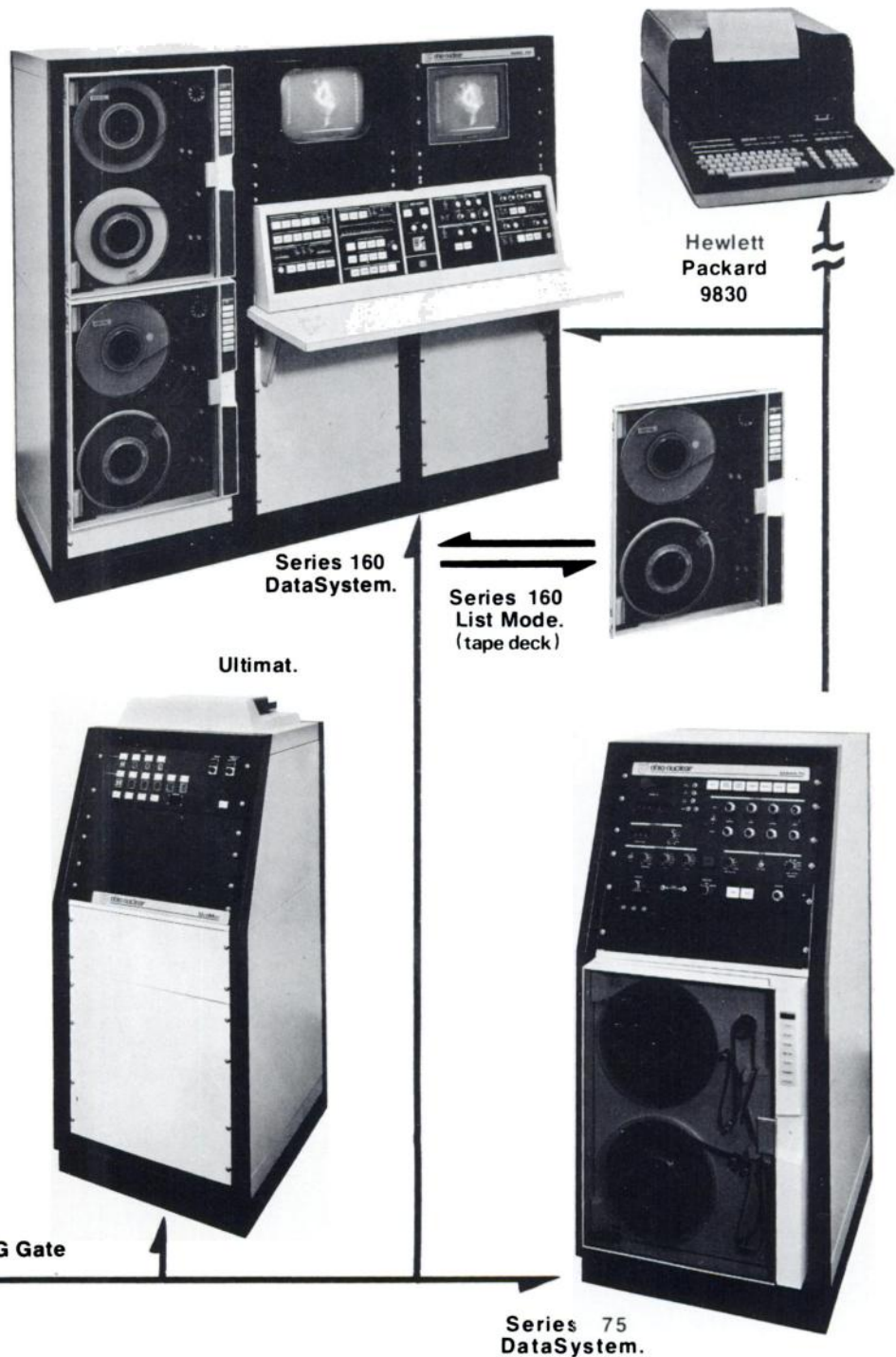
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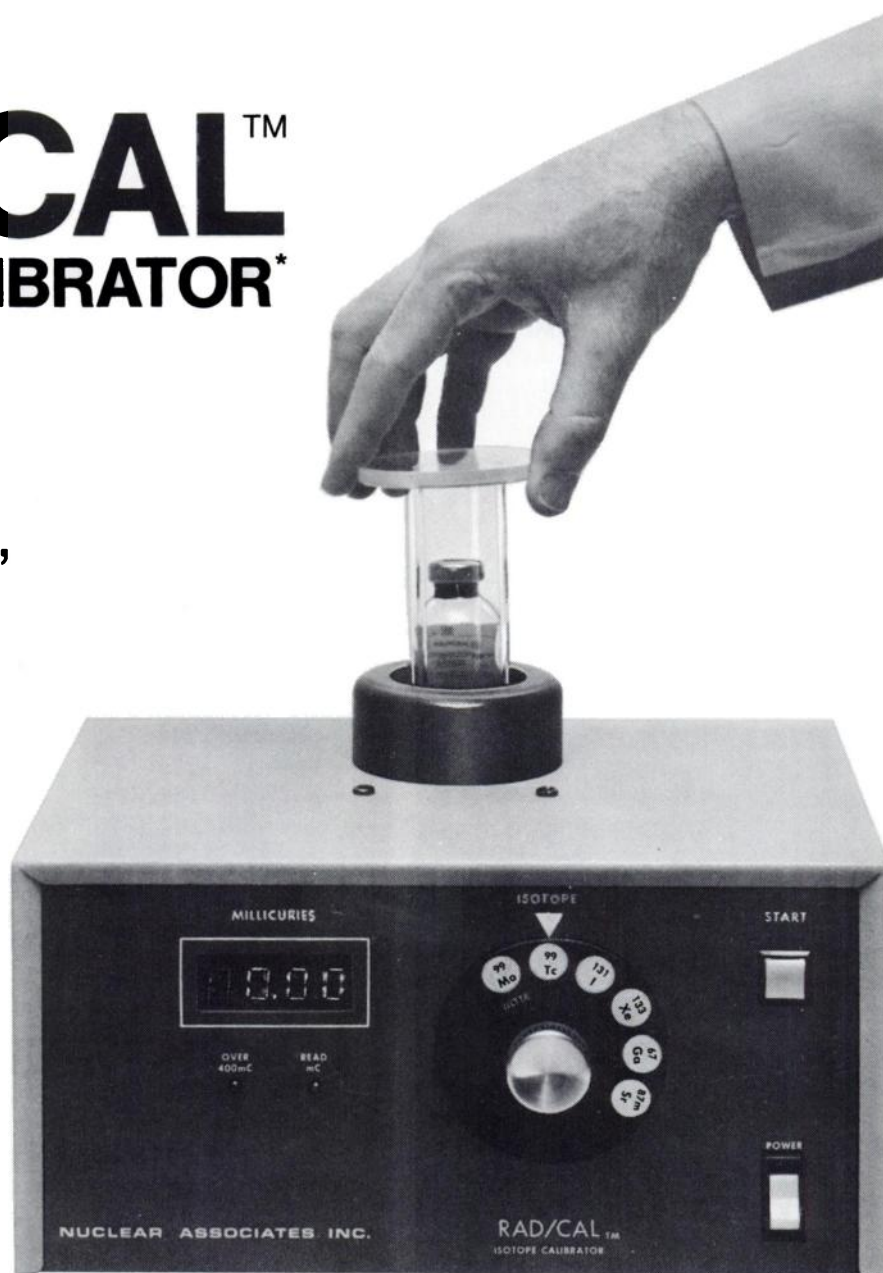
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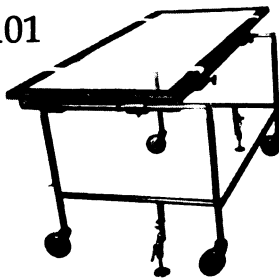
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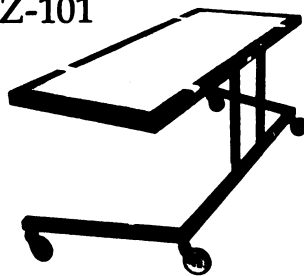
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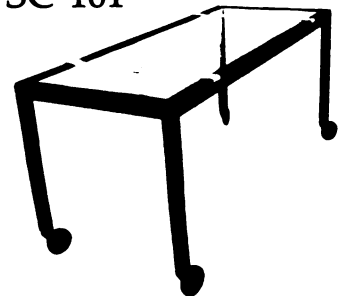
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See following page for brief summary.

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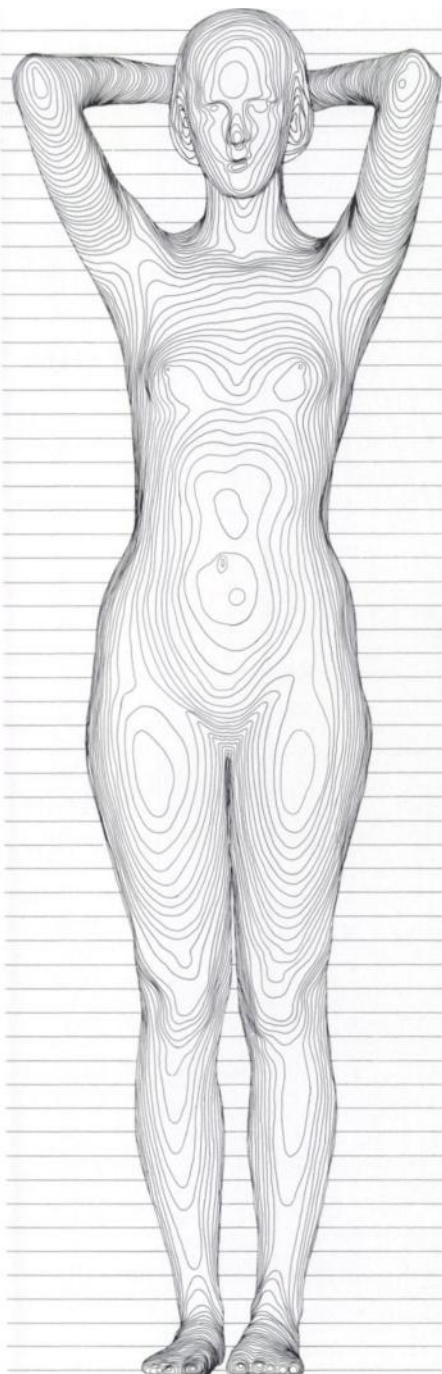
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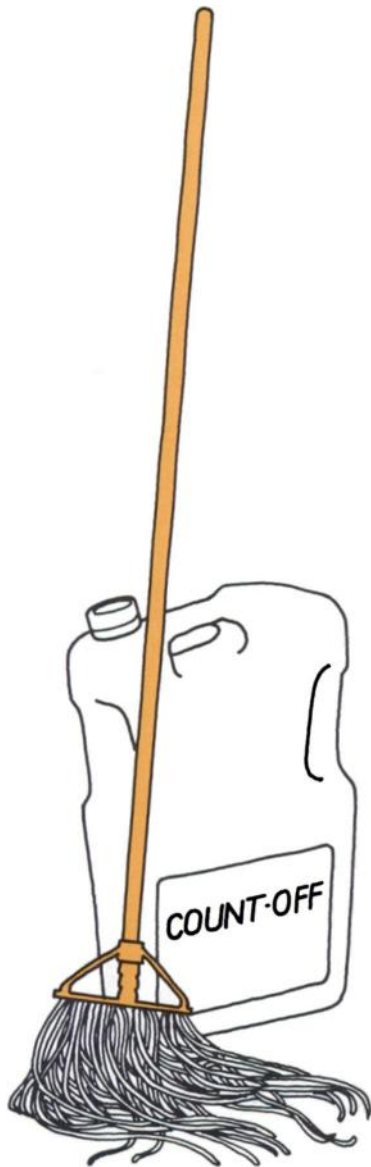


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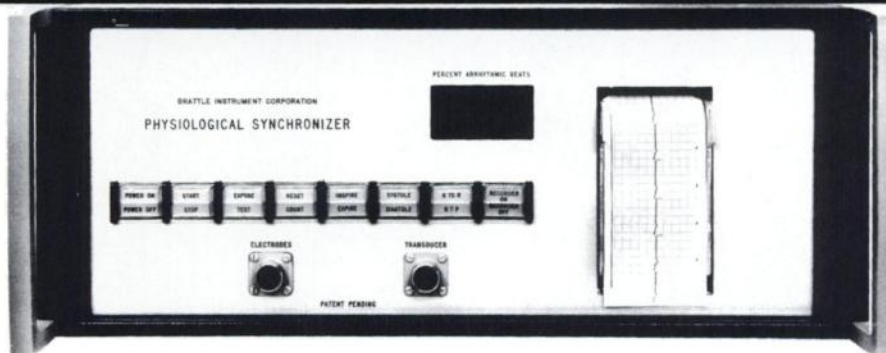
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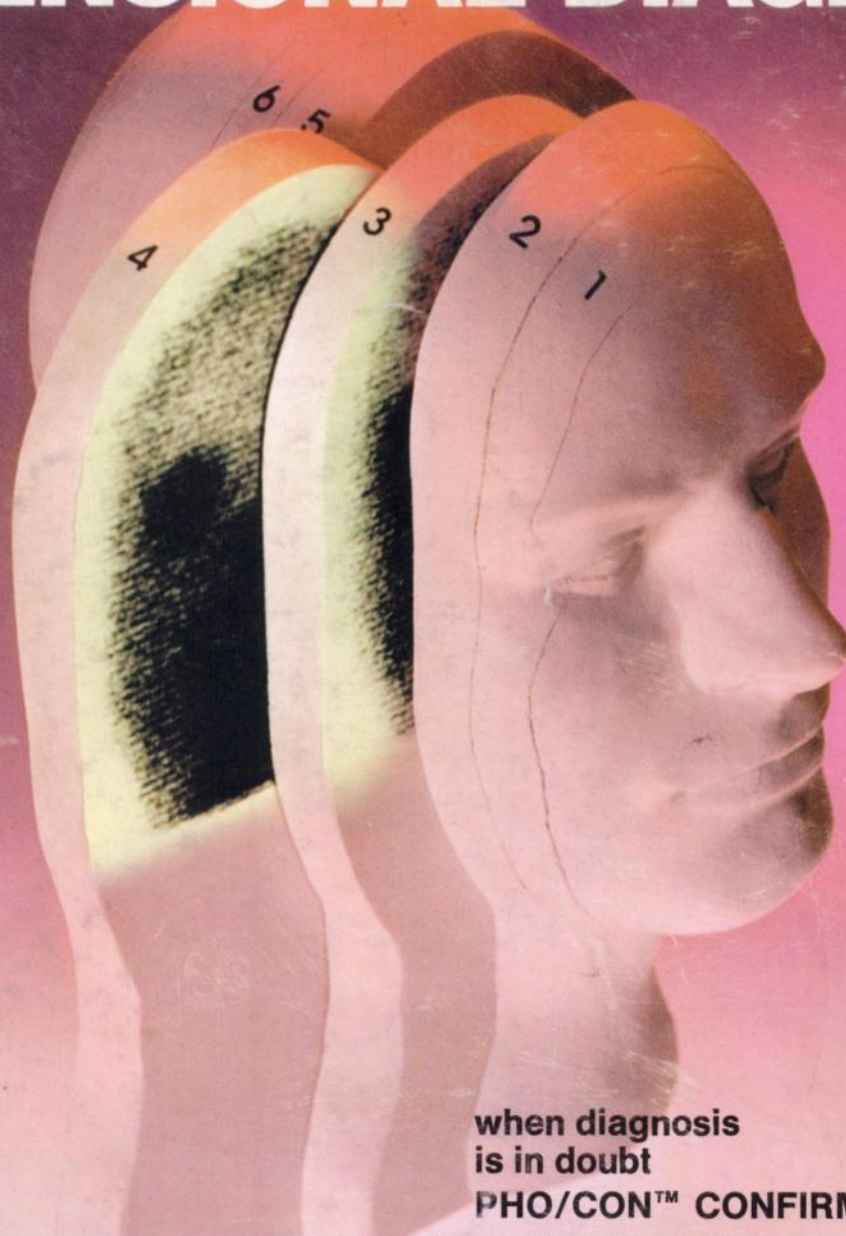
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Your facility gets up to six anterior and six posterior tomographic images from one PHO/CON scan, each readout being sharply focused on a different

plane in the subject. Lesions can be dramatically visualized with near-constant resolution regardless of depth or the organ being imaged.

PHO/CON utilizes two detector heads for simultaneous anterior-posterior imaging. It has a 26" x 70" scan field, suitable for any size study. Each detector head produces six simultaneous 2" x 2" tomographic images on 5" x 7" film, or three simultaneous 2" x 5½" whole body images on 8" x 10" film.

PHO/CON's tomographic capability provides significantly more data than is available from conventional dual-headed scanners. In addition, PHO/CON has 3 times the crystal area of a dual 5" scanner, with scanning speed up to 1000 cm/min. A full range of collimators is available.

PHO/CON is now proving its dimensional diagnostic value in teaching hospitals and cancer clinics worldwide. For complete information on this first of the new multi-plane imagers, write or phone.

SEARLE

Searle Radiographics Inc.

Subsidiary of G. D. Searle & Co.
2000 Nuclear Drive
Des Plaines, IL 60018, U.S.A.
Telephone: 312-298-6600